CAREER MARGINALITY: CHARACTERISTICS AND EMPLOYMENT SITUATION OF REGISTERED NURSES WHO WORK IN LONG-TERM CARE FACILITIES AND HOSPITALS

by

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Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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Using secondary data analysis, this study compares registered nurses (RNs) who work in long-term care facilities with RNs who work in hospitals. Among health care professionals, employment in long-term care facilities tends not to be considered a high status position. Additionally, factors such as greater career opportunity and higher pay seem to place hospitals in a more favorable position in recruiting qualified, career oriented RNs. This situation creates a dilemma for long-term care facilities, where there is a critical need for such nurses.

The central concept of the study is "career marginality," which is defined as the occupational situation of long-term care facility employment, as well as individual demographic and employment characteristics of RNs which might make them less qualified or desirable from the

perspective of employers, or less career oriented from a personal standpoint. Using data from the 1980 National Sample Survey of Registered Nurses II, multiple logistic regression analysis was used to investigate career marginality.

It was hypothesized that RNs having the following marginal characteristics were more likely to be employed in long-term care facilities than in hospitals: (a) limited formal education, (b) current nonpursuit of a higher academic degree, (c) nonparticipation in continuing education, (d) part-time employment, (e) limited percent of time employed in nursing since graduation from basic nursing education, (f) being in an older age category, and (g) having the family responsibility of children at home. Findings revealed that hospital employed RNs were less likely to have these marginal characteristics than RNs employed in long-term care facility RNs. It was also hypothesized that a nonmarginal career orientation--operationally defined as full-time employment, having been employed in nursing 80% or more of the time since graduation from basic nursing education, and participation in continuing education--would be more likely to exist among hospital employed RNs. Results indicated that this was the case. The significance of the study findings is the implications they might have for adequately providing an acceptable standard of care for the rapidly growing number of elderly people in long-term care facilities.

CHAPTER 1
INTRODUCTION

Problem

As a consequence of the aging of its population, American society is currently experiencing a significant demographic shift. Americans are living significantly longer than in the past, and the elderly population is growing at a more rapid rate than the remainder of the population. At the beginning of this century, only one in 25 Americans was over age 65 (Schick, 1986). In 1984, one in nine American citizens was at least age 65. By the year 2050, one in five Americans will fall into this age category. In the last two decades, the 65 and older population increased twice as fast as the under-65 population. Whereas in 1980 only 40% of elderly people were over age 75, 50% are expected to be in the 75-plus age category by the year 2000.

Life expectancy at birth in the United States has also changed dramatically. In 1900, the average individual could expect to live 47.3 years (Schick, 1986). By 1950, this life expectancy figure had risen to 68.2 years. In 1983, the average life expectancy at birth had increased to 71.0 years for men and 78.3 years for women. Of persons reaching

age 65 in 1987, men had an average life expectancy of 14.8 more years and women had an average life expectancy of 18.6 more years (American Association of Retired Persons & Administration on Aging, 1988). These changes in life expectancy help explain the upward movement of the median age of the American population, which reached 31 years in 1984 and is expected to increase to 36 years by the year 2000 (Schick, 1986).

Particularly relevant with regard to the aging of the population is the increase in the number of persons 85 years of age and older; these individuals constitute the fastest-growing subgroup of the older population. Between 1960 and 1980, this age group increased by 142% as compared to 26% for the total population, and by the year 2000 the 85 and older age group is projected to increase by 117% compared to 18% for the overall population (Rosenwaike, 1985). This segment of the population is expected to triple its 1980 size by 2020, and by 2050 is expected to increase by seven times its 1980 size (U.S. Senate Special Committee on Aging, 1985-86).

Life expectancy at age 85, which in 1980 was 5.08 years for males and 6.32 years for females, increased 23.7% between 1960 and 1980, and is projected to increase an additional 43.8% by the year 2040 (Soldo & Manton, 1985a). At age 85 the average years remaining is 5.3 for white males and 6.7 for white females; for black men and women at this

age, the average years remaining is 6.7 for males and 7.8 for females (Zopf, 1986). Partly because of the increased life expectancy of older people in the higher age categories, between 1984 and 2050 the 85 years and over population is expected to rise from approximately 1% to over 5% of the total population, and from 9% to 24% of the 65 and older population (U.S. Senate Special Committee on Aging, 1985-86).

A major problem posed by the older age groups, and in particular the 85-plus age group, is a very heightened demand for institutional health care (Soldo & Manton, 1985b). Along with greater life expectancy come frequent chronic health conditions with accompanying functional limitations which put elderly persons at an increased risk of both hospital and long-term care facility admittance. It has been pointed out that the greater likelihood of physical dependency is a distinguishing characteristic of the 85 years and older age group (Rosenwaike, 1985; Rosenwaike & Logue, 1985), and studies which present reliable data indicate a dramatic and significant increase in functional limitation for persons 85 years and older as compared to those 75 to 84 years or even 80 to 84 years (Cornoni-Huntley et al., 1985).

In the elderly population, more than 70% of persons 85 years of age and older require some type of assistance with one or more activities of daily living (Johnson & Hoover,

1982; Soldo & Longino, in press; Suzman & Riley, 1985). For noninstitutionalized elderly people, 36% of those 85 years and older have one or more limitations in their daily living activities which require assistance (Longino & Soldo, 1987), and these persons are three to five times as likely to need personal care assistance than older individuals aged 65 to 74 (Manton & Soldo, 1985). It has been noted that, because there is such a high correlation between advanced age and increased functional disability, the demand for long-term care in particular in the United States will continue to increase (Barberis, 1981).

Institutionalization has increasingly become a recourse in dealing with incapacitation and limited functional capability among people in the older age groups. For instance, one out of four persons over age 85 resides in a nursing home (Kane & Kane, 1980; Longino, 1988; Rosenwaike, 1985). Moreover, the number of older persons in nursing homes in general is expected to double in the next twenty years (U.S. Department of Health and Human Services, cited in Robinson, 1987). This trend necessitates an increase in the number of health care providers required to meet the growing need.

An examination of the health care needs of elderly people, regardless of setting, reveals that most of the professional care required is nursing care (Davis et al., 1985). Consequently, as the aging population continues to

grow, it is apparent that the need for nurses will also increase. Currently, there is a nationwide shortage of nurses in both hospitals and long-term care facilities, and the demand for registered nurses (RNs) continues to grow (Associated Press, 1987; "Why Nurses Quit," 1988). While much attention is being paid to the critical nursing shortage in hospitals, the consequences in those settings specifically geared to elderly persons are even greater (Brower, 1988). Thus, an area for particular concern is the supply of RNs for long-term care facilities, since the presence of physicians is limited in this setting. State and federal regulation requires only that physicians visit nursing homes once every 30 days, and it has been reported that the 17% of physicians who make nursing home visits spend little time there (Aiken, 1982).

Martinson (1984) has emphasized that the disparity between the need for and supply of nurses to care for older persons is an issue that affects the quality of health care available to elderly people. This care provider shortage is unfortunate, since nurses represent a segment of the health care profession which, given sufficient numbers, can provide quality care for elderly persons at a reasonable cost (Davis et al., 1985; Kaeser, 1981; Morishita & Hansen, 1986; Wolanin, 1981).

Recently, there has also been a significant decrease in applications to, enrollment in, and graduation from nursing

education programs (Johnson, 1980; Rosenfeld, 1987). Data on 1986 fall admissions to nursing schools reveal an 8.8% decrease from 1985 to about 83,000, which is the lowest fall admission figure since 1970 (Rosenfeld, 1987). Moreover, the number of nursing school graduates in 1986 was only three-fourths of what it had been in 1983 ("Why Nurses Quit," 1988). The U.S. Department of Health and Human Services (1985) has projected a shortage of 600,000 nurses prepared at the baccalaureate and higher levels by the year 2000. One reason for declining nursing school enrollment appears to be that women, who traditionally have comprised the bulk of the nursing work force, are gaining greater access to other professions (Rosenfeld, 1987).

An additional factor affecting nursing care for older people is that home health care and health maintenance organizations have in recent years begun to attract many of those persons who do become nurses (Coleman, 1987). Other areas of nursing also compete for RNs. The dilemma involving home health care is that although this care approach has made it possible to delay institutionalization as health problems occur in older persons, the increasing number of nurses committed to home health care means that fewer nurses are available for work in long-term care facilities.

Currently, there are an estimated 21,000 vacant RN positions in long-term car facilities (Pulley, 1988). It is

estimated that, by the year 2000, there may be an overall shortage of from 500,000 to 600,000 RNs in budgeted nursing positions nationwide (Fowler, 1989). However, because there also presently are an estimated 117,000 RN vacancies in hospitals (Pulley, 1988), the nurse recruiting competition from hospitals implies that long-term care facilities may face a difficult task in attempting to fill nursing vacancies. In long-term care facilities the demand for nursing personnel is such that this area of employment has become the fastest growing of any within the health care field (Abdellah, 1981).

The increasing age of long-term care facility residents, whose average age is 83 years (Davis et al., 1985), coupled with the polypathology of advanced age, is requiring more highly skilled professional nursing care in this health care setting. Along with this, the recently implemented Medicare payment policy based on the "Prospective Payment System" (Health Care Financing Administration, 1989) has resulted in hospitals discharging older patients sooner than in the past, and with lingering health conditions requiring continued health care attention (Donley & Flaherty, 1989; Hamilton & Wilson, 1989; Kayser-Jones, 1989; Walsh & Wilhere, 1988). These persons frequently are transferred to long-term care facilities, and the implication of this is that the need to have skilled RNs

to manage the health problems of these elderly people becomes of increased importance.

A crucial factor in long-term care is the quality of care rendered. Since the physician is largely absent in long-term care facilities, the level of care in this setting is greatly dependent on the skills and knowledge of the registered nurse. Increasingly, there is a critical need for dedicated, well-educated RNs in long-term care facilities. In this regard, one might question whether committed, qualified RNs are being employed in long-term care facilities or in other more competitive work settings such as hospitals. With respect to recruitment, hospitals may, in fact, have an edge in certain areas. For instance, it has been pointed out that in the recruitment of younger, better-educated RNs, the increasing salary lag puts long-term care facilities at a disadvantage as hospitals increase pay in the competitive struggle to employ nurses (Brower, 1988).

Scope and Purpose of the Study

The literature reveals that compared with younger persons, elderly people are less favorably viewed by society (Achenbaum, 1978; Bradt-Ryan, 1979; Cowgill, 1974; Tuckman & Lorge, 1953). Similarly, within the health professions, employment in long-term care facilities generally is not considered to be a high status position (Davis et al., 1985;

Miller & Barry, 1979; Reif, 1982). Besides this attitudinal influence, factors such as greater career opportunity and higher pay seem to place the hospital in a favorable position in terms of recruiting qualified, career-oriented RNs for employment. If this is the case, the situation creates a dilemma for long-term care facilities, where there is a critical need for qualified, committed RNs.

Using data from the National Sample Survey of Registered Nurses II (Moses & Spencer, 1980), this study compares RNs who work in long-term care facilities (i.e., the work setting category designated as "nursing home or extended care facility" on the research questionnaire) with RNs who work in hospitals. Because more than 96% of the residents in long-term care facilities are in nursing homes (Zopf, 1986), for the purposes of this study the terms "nursing home" and "long-term care facility" will essentially be considered synonymous.

The central thesis of the study is that RNs who are less qualified professionally in terms of educational preparation, who are less career oriented from the standpoint of limited participation or discontinuity in their nursing employment (i.e., part-time employment and limited percent of time employed in the nursing profession since graduation from basic nursing), or who might have less marketability or attractiveness to employers due to being in an older age category, are more likely than other nurses to

be employed in long-term care facilities and less likely to be employed in hospitals. In regard to these characteristics, they are more "marginal" from a career standpoint than RNs who work in hospitals. Combining with individual demographic and employment characteristics of RNs when considering occupational marginality, is the lower status employment position within the health profession of the long-term care facility itself. The concept of career marginality and its empirical indicators, as related to the present research, are more fully presented in the "Conceptual Framework" chapter of this study.

Although the data for this study are from 1980, the study has applicability in terms of investigating the concept of career marginality in the health care profession, specifically, among registered nurses who work in long-term care facilities and hospitals. Also, since Section 951 of PL 94-63 and Section 708 of PL 94-484 require reports to Congress on a continuing basis on national data pertaining to the supply, distribution, and characteristics of RNs (Bentley et al., 1982), the present study can serve as a comparative base for more recent data. For example, the recent release of the National Sample Survey of Registered Nurses 1988 (National Technical Information Service, 1989) allows the comparison of data over an eight year span. Finally, an advantage of this study is that it employs a large sample within which RNs working in two different

settings, long-term care facilities and hospitals, are compared. This approach differs from the frequent method of studying nurses in a single setting, and it provides a comparative frame of reference for evaluating the career marginality of registered nurses when such marginality among long-term care facilities RNs is of particular concern.

CHAPTER 2
REVIEW OF THE LITERATURE

The Professional Registered Nurse

The present study is a study of registered nurses (RNs), with special emphasis on RNs who work with the elderly in long-term care facilities (i.e., "nursing homes" and "extended care facilities"). Registered nurses are professionally trained individuals who have the skill and knowledge to supervise and administer patient care, and thus are valuable as providers of care for aging persons, who have unique and special health care needs. Educational preparation for the RN profession can be obtained from one of five types of programs (Martinson, 1984). These are (1) diploma (traditionally a three-year program attached to a hospital), (2) associate degree (a two-year program most often found in junior or community colleges), (3) baccalaureate degree (generally a four-year program associated with a college or university), (4) master's degree (a two-year program that requires a baccalaureate degree in another field), and (5) ND degree for students who have college degrees in other areas (usually a four-year program), presently offered only at Case Western University.

Successful completion of any one of these programs gives students the right to take state board examinations which, if passed, confers the right to use the title, "registered nurse."

Through the nursing process, which involves planning, implementing, and evaluating patient care, direct care is provided by RNs. Registered nurses work in a collaborative and collegial association with other health professionals to assess health care needs, and assume responsibility for nursing care. During the course of their nursing practice, RNs evaluate the effectiveness of actions pursued, identify and undertake systematic investigations of clinical problems, and conduct periodic reviews of their own and their peers' delivery of professional health care (Nichols, 1982). The nursing profession has been moving steadily in the direction of more academic preparation for its members. Specialization has also evolved with the specialty gerontological nursing of particular relevance when considering the changing demographic structure of American society.

In recent decades, governmental policy has helped establish long-term care institutionalization as a standard course of action for dealing with the declining functional capacity of aging individuals. Consequently, the nursing home has emerged as a primary, medically oriented facility serving the health care needs of older persons. For

example, whereas in 1939 there were approximately 1,200 nursing homes in the United States with a total of approximately 25,000 beds, by 1972 there were 23,000 nursing homes with over 900,000 beds (American Nurses' Association, 1982). Thereafter, nursing homes did not continue to increase dramatically in number, but rather began to increase in size. In 1985, for instance, there were approximately 23,600 nursing homes nationwide serving 1.5 million residents (Ebersole, 1985).

The following sections of this chapter focus on three different approaches to studying RNs in the context of their employment in the two contrasting work settings, long-term care facilities and hospitals. The first, the social structural approach, deals with the various aspects of the institutional employment setting. The second, the social psychological approach, is centered around attitudes toward working with elderly people. The third approach focuses on individual demographic and employment characteristics of RNs. Of central interest to the present study is the third approach, but it is accompanied by the significance of the social structural component, employment setting, as manifested in a long-term care facility or hospital work situation.

Social Structural Factors Related to Health Care for Elderly People: The Long-Term Care Facility Versus the Hospital

In dealing with social structural factors, the focus is on large-scale social function and interaction patterns (Johnson, 1981), which involve the two social institutions, long-term care facilities and hospitals. The social structural components of health care institutions include factors associated with the defined occupational and social roles of the people found there, as well as the organizational characteristics of, and interaction patterns within, the institutions. The social structural factors of long-term care facilities and hospitals dealt with below are (a) the organizational model, (b) salary, benefits, and career opportunity for RNs, (c) the status of the employment setting position, and (d) the patient population.

The Organizational Model

It has been noted that there are contrasting organizational models for hospitals and long-term care facilities (Rogers, 1989; Shore, 1977). These are the medical model and the nursing care model. Whereas hospitals are characterized by the medical model, long-term care facilities are more appropriately characterized by the nursing care model.

The medical model focuses on diagnosing and medically treating illness or disease. Care is typically short-term

care given in the hospital or clinic setting to "patients" with acute conditions. The care given is directed and/or administered by physicians, who are very prominent and authoritative figures in the hospital and clinic health care settings. Because the medical orientation toward immediate and threatening conditions frequently involves the use of technological equipment (e.g., cardiac and neurological monitors), as well as the ability to deal competently with emergency situations, hospitals generally require a higher level of nursing skills than do long-term care facilities. The ultimate objective in the medical model is a cure for the physician-diagnosed disease or illness. There is a paradox here, because it is the advancement in medical technology and treatment that has resulted in a burgeoning of inevitable chronic impairments frequently requiring long-term care facility institutionalization as people live longer.

Whereas the hospital is the domain of the physician as the central figure in the medical model, the long-term care facility is the domain of the nurse. Care in long-term care facilities, where the physician is largely absent, is typically nursing care rather than medical treatment. Haight has summed up the situation in this way: "Nursing home care belongs to nurses. Nurses make the decisions, provide the care, educate the caregivers, suggest changes,

act as role models, and influence the decisions of the physician" (1989, p. 10).

The nursing care model is centered around the fact that people in long-term care facilities can generally be characterized as being "residents" for an extended period of time, and do not have an immediate, acute health problem. They are not patients to be quickly cured and discharged as in a hospital, but rather persons for whom the long-term care facility has essentially become their home, and who thus need a more nonmedical, comprehensive approach to meet their totality of needs during the course of their daily living. Although long-term care does include essential medical care, it nonetheless does not involve the same type of medical model orientation as found in the hospital. The long-term care facility, while not geared toward medical care as its central activity, does have medical capability, which essentially means having medical care available when needed. Consequently, there remains a significant role for medical care in long-term care facilities, even though the medical model does not assume the dominant role in this setting.

Essentially, long-term care is characterized by chronic illness or impairment, be it physical, mental, or both, and the professional care given is mostly nursing care. The dilemma is that, whereas the hospital has been characterized as the physician's domain, the long-term care facility

unfortunately has not attracted the professional registered nurse in significant numbers. For example, in 1986 hospitals employed 96.0 RNs per 100 patients while long-term care facilities employed only 5.7 RNs per 100 residents (Donley & Flaherty, 1989). Possible reasons for this situation may become more apparent in the following sections.

Earnings, Benefits, and Career Opportunity

It has been pointed out that nurses who work in long-term care facilities, as compared with nurses who work in hospitals, receive lower salary, fewer benefits, and have limited opportunity for career advancement (Davis et al., 1985; Reif, 1982; Robb, 1979). A survey by Levine and Moses (1982) revealed that nurse administrators in nursing homes received an average salary 30% below the salary paid to nurses employed in a comparable position in hospitals, and that salaries of staff nurses in nursing homes averaged only 80% of that received by hospital nurses. Giordano and Panfil (1987) have reported that RNs working in long-term care facilities in Los Angeles County were paid $4,000 less in annual salary than RNs working in hospitals, and also received fewer fringe benefits. Other studies have shown that an additional disincentive in long-term care facility employment is the limited opportunity for staff development and career advancement (Health Resources Administration, 1980; Kayser-Jones, 1981; Vladeck, 1980).

In a study which compared benefits received by nurses working in different settings, it was found that only 9.2% of nursing home nurses were paid for sick leave and vacations; only 10.8% of these nurses had health or life insurance paid for by their employers, and only 11% had retirement programs (Health Resources Administration, 1980). This contrasts with benefits received by hospital nurses, virtually all of whom had paid holidays and vacations as well as retirement and health insurance plans, and most of whom received overtime and shift differential pay. Hospital nurses, in fact, continue to receive better benefits than general industry employees (Lappa, 1989).

Presently, hospitals nationwide are using pay and benefits to recruit and retain registered nurses. In 1988, for example, full-time hospital staff RNs averaged $12.18 per hour and part-time RNs averaged $12.20 per hour (Powills, 1989). Data compiled by the American Nurses' Association reported the largest real pay increase in history for hospital employed RNs in 1988, with the average starting salary increasing by 6.9% to $22,416 annually and the average maximum salary increasing by 10.6% to 32,160 annually (Tolchin, 1989). A survey by the Commonwealth Fund of 15,000 nurses and 400 hospitals in New York, Boston, Pittsburgh, Chicago, Houston, and Los Angeles revealed that, for hospital employed nurses, 1988 entry level salaries ranged from $20,000 to $28,000 and nursing salaries peaked

between $30,000 and $40,000 (Associated Press, 1989). These figures are consistent with those compiled by the American Nurses' Association for 1988 (Tolchin, 1989). With regard to benefits, along with medical insurance, continuing education, and vacation time, hospitals offer pension plans (86.3%), tax-sheltered annuities (81.9%), tuition reimbursement (76.4%), and maternity leave (73%). Some hospitals also provide child care (12.0%), housing (5.9%), and adult dependent care (2.8%) (Powills, 1989).

The implication of hospitals' recruitment and retention strategy is that long-term care facilities, which very often are not able to compete financially with hospitals, are at a disadvantage in recruiting well-educated, young, career oriented RNs. This is a factor that might well have an effect on the quality of care available for long-term care facility residents.

Status

Due to negative attitudes toward aging and elderly people, employment in long-term care facilities generally is not favorably viewed, and it has been pointed out that one of the major problems associated with long-term care facilities is social values regarding the older persons (Miller & Barry, 1979). Robb has noted that "the elderly are undervalued in numerous ways by most segments of society" (1979, p. 50). It has also been suggested that there is a lack of public policy defining what older persons

are worth in our society and, because of a prevailing utilitarian orientation, there is a tendency to invest in things with a productive future (Shore, 1977).

The low status of long-term care facility employment, then, is partially linked to the fact that the residents themselves are devalued and of low status. A characteristic of long-term care facility residents is that their income is generally below poverty level (Miller & Barry, 1979), which socially is a low status characteristic. Moreover, whereas most acute hospital care is financed by private insurance (or by Medicare for Social Security recipients 65 and older or disabled), the bulk of long-term care is financed through Medicaid, which is essentially a means tested welfare program based on need. Compared with private insurance and Medicare, Medicaid is a low status financing program for low status persons. However, many long-term care facility residents financed by Medicaid originally entered under Medicare and/or private insurance or private payment coverage, but then had to switch to Medicaid financing when other coverage ended and personal finances were depleted. For persons applying for long-term care facility admission, evidence suggests that discrimination against Medicaid sponsored individuals exists (Beeby et al., 1987; Blake et al., 1987).

It has been emphasized that one factor directly related to the shortage of nurses and quality of care in long-term

care facilities is the low status and prestige associated with the practice setting and positions (Davis et al., 1985; Reif, 1982). Besides the influence of the status of long-term care facility residents themselves, it has been noted that nurses tend to value medical knowledge more highly than nursing knowledge, and often attempt to emulate physicians through the acquisition of medical or technical knowledge, values, skills, and beliefs (Rogers, 1989). Medical knowledge, as prevalent in the medical model hospital setting, is afforded more value because it is seen as being scientific and objective, whereas nursing knowledge continues to be seen as unscientific, intuitive, and highly subjective.

The Elderly Patient Population

The general hospital is the primary source of health care services for elderly people. Of the population 65 years and older, 20% use inpatient services at least once a year (Davis et al., 1985). Most of the hospital admissions for elderly people are for acute episodes of chronic problems, and 60% of beds may be occupied by older persons on any given day. Hospital stays typically are of short duration; they average 5.6 days for persons under 65 years of age and 8.8 days for people 65 years of age and older (Dyer, 1989). Utilization of such services as emergency room, radiology, pathology, and rehabilitation has risen sharply in recent years (Davis et al., 1985).

Although only 5% of people 65 years and older reside in long-term care facilities, about 20% who reach age 65 will spend some time in such institutions, this usually being during the last years of their lives (Davis et al., 1985). Long-term care facility residents have much longer stays than hospital patients. Residents typically fall into one of the two categories of short-stay and long-stay. The average length of stay for the shorter-term residents is 1.8 months and for the longer-term residents, 2.5 years (Davis, et al., 1985).

In contrast to the hospital, the long-term care facility is characterized by a much more homogeneous patient population. The average age of this population is about 83 years, with over 60% of the residents being at least 80 years of age, and there is a preponderance of persons severely and chronically impaired by multiple, advanced physical diseases, behavioral pathology, or a combination of the two (Davis et al., 1985; Miller & Barry, 1979; Zopf, 1986). In the home wives very often serve as caregivers for ailing spouses (Dimond, 1989), but since wives generally outlive husbands, they are typically left alone to face their own eventual decline, unless a child is available and willing to care for them. Consequently, in long-term care facilities about three-fourths of the residents are women.

Mental impairment is one factor which may make working with elderly people in long-term care facilities difficult,

and staff who work with mentally impaired residents have reported high levels of stress (Chartock, 1987). One-half to three-quarters of long-term care facility residents have some type of cognitive disorder which affects their thinking and/or behavior (Doty, 1987; Hing, 1987; LaPorte, 1982; Rovner & Rabins, 1985; Sacharow, 1987; Schick, 1986). Some degree of cognitive impairment has also been reported in anywhere from 24% to 80% of hospitalized elderly persons (Cavanaugh, 1983; Foreman, 1989; Gillick et al., 1982; Lipowski, 1983; Williams et al., 1985). However, if such disorder presents itself as other than an acute episode, it then typically becomes a primary reason for long-term care facility placement (Levkoff et al., 1986; Zarit & Zarit, 1983). There has been a tendency for reaction toward mental disorder to be negative (Scheff, 1966, 1974, 1975), and this coupled with reaction to the severe and irreversible physical deficits of aging may have a compounding effect on long-term care facility employed nurses.

In addition to the communication difficulty posed by mentally impaired long-term care facility residents, behavioral problems such as noncompliance, verbal abuse and vocal disturbance, agitation and aggression, wandering, and self-injury may present difficulties for the nursing staff (Burgio et al., 1988; Hoffman, 1987; Rader, 1987; Zimmer et al., 1984).

Another type of problem with residents in long-term care facilities is "excess disability," which exists when functional incapacity is greater than that warranted by actual impairment (Burgio et al., 1988). In long-term care facilities, nursing care problems requiring psychiatric consultation are frequent (Ferrario, 1987). The literature suggests that mentally impaired residents of long-term care facilities present unique problems that may result in low morale, high stress, and burnout among nursing care providers (Hoffman, 1987; Wilson & Patterson, 1987).

Heine (1986) has focused on the negative impact of the nursing home environment in relation to "burnout" among nursing home personnel. Heine's contention was that the constant daily demands on nurses working in nursing homes with confused, dependent, elderly residents often lead to job stress and, ultimately, burnout. This situation, in turn, negatively affects the nursing home organization and the residents, thus lowering the quality of care rendered. Heine, however, did not conduct a systematic, empirical study to test her assumptions.

Along with physical appearance and state of dependency, death potential of long-term care facility residents may elicit a negative response from nurses (Robb, 1984). It has been noted that working with aged or dying patients may raise nurses' fears and anxiety about their own aging and death, and serve as a reminder of the loss of family members

or friends (McConnell, 1981). Vickio and Cavanaugh (1985) have reported that increasing levels of death anxiety among nurses who work in long-term care facilities are associated with more negative views of aging and older persons.

Given the negative factors associated with long-term care facility employment, it is important that nursing students, in their preparation for employment, be provided with an unbiased and positive presentation of what working with elderly people in long-term care facilities can be like. If preconceived ideas can be altered through actual clinical experience in an innovative manner, then perhaps more students might choose long-term care facility employment. This issue is more fully discussed below.

Clinical Experience in Nursing Education

It has been pointed out that clinical experience for nursing students has been oriented largely toward preparing nurses to work in hospitals (Reif, 1982). Although there has recently been some movement toward clinical experience in long term care facilities, clinical experience in hospitals is still much more the rule.

Some concern exists that when nursing students are exposed primarily to badly incapacitated older persons such as those frequently found in nursing homes, negative attitudes toward caring for aging individuals may be formed or reinforced, and this might contribute to students pursuing other specialties in preference to gerontological

nursing. Investigation of nursing home clinical experience on attitudes of student nurses toward working with elderly people has found the overall impact to be negative (Cook & Pieper, 1985).

In order to provide a more favorable alternative to the nursing home environment for nursing students many nursing education programs incorporate experience in other settings with older persons who are in fairly good health. The reasoning here is that this type of clinical exposure to elderly people might help foster more positive attitudes toward aging individuals. Such success has been reported using the experience with well elderly people strategy with nursing students (Brock, 1977; Dunn & Abel, 1983; Spier & Yurick, 1989).

Another successful approach to clinical experience in long-term care facilities has been to place nursing students under the supervision of registered nurses who are given more control of the patient care situation. It was found that increased job satisfaction and improved quality of care result from giving nurses more autonomy, responsibility, and authority (Patterson, 1987). Moreover, student nurses given clinical experience under supervision of such nurses react favorably to the situation, and come to see the long-term care facility setting as an opportunity for autonomous, challenging, and satisfying practice. This enthusiasm is in

contrast to previous reactions of students, who tended to view long-term care as an inappropriate clinical setting.

By being allowed to function in the full scope of their role, RNs can be a powerful resource in the nursing home setting. Administrators can benefit from relying more on the professional abilities of RNs, while at the same time being cautious not to overwork nurses and consequently contribute to job stress and dissatisfaction. Similarly, it was found that RNs feel more accountable for their patients' care when they are given more responsibility in planning, implementing, and evaluating the care of specifically assigned patients in long-term care (Jones, 1986).

In response to the realization that professional nursing practice is not well established in the nursing home industry, there is currently a trend in nursing education toward utilizing the nursing home as a positive clinical experience for students. It is hoped that this will foster greater interest in working in such a setting in individuals who become RNs. Gass and Tarr have maintained that this approach can be successful if nursing home clinical experience is "guided by a philosophy which emphasizes independence, choice, and flexibility" (1986, p. 27), and if students are allowed a greater role in structuring their learning experience and in developing objectives based on their specific interests and learning needs. Burke and

Donley (1987) have also stressed the value of utilizing the nursing home to educate health professionals in the field of gerontology and to develop a model of gerontological nursing. Burke and Donley reported on a project centered around the "teaching nursing home," where academic nursing principles were applied to test models of advanced nursing practice.

Social structural aspects of working with elderly people have been discussed. In the sections which follow, social psychological and individual factors are discussed in relation to nurses' employment experience with older persons. These are factors that may play an important role in determining the supply of registered nurses available to provide quality care for America's elderly population.

Social Psychological Factors Related to Health Care for Elderly People

Attitudes toward Elderly People in the Health Care Profession

It has been argued that the attitudes of health care professionals affect the quality of geriatric care (Keith, 1977), and there have been suggestions that medical care of older people in the United States has been characterized by negativism, defeatism, and antipathy (Futrell & Jones, 1977; Gruber, 1977). Similarly, it has been pointed out that health care professionals may or may not be providing services to elderly patients as a matter of choice and may,

in fact, have negative and stereotypic attitudes regarding the geriatric population (Kosberg, 1983). Even where attitudes tend to be favorable, health care professionals may, given a choice, still not be willing to work with older persons (Lutsky, 1980).

Upon examining 12 empirical studies, Palmore (1977) found that most health professionals expressed negative stereotypes about elderly people, and preferred to work with younger adults or children. Few medical students and practitioners specialized or were interested in geriatrics. The studies Palmore examined concluded that many negative attitudes derive from the lack of factual information about elderly persons and lack of contexts in which stereotypic attitudes can be examined and altered. It has been pointed out that failure to have a realistic understanding of older people can have a negative effect on the quality of both the medical treatment rendered and the client-health care professional relationship (Kart, 1981).

Studies from the time of Palmore's analysis have similarly indicated limited interest in gerontological practice among various health profession students and practitioners, as well as a lack of knowledge of and false ideas held about elderly people (Belgrave et al., 1982; Geiger, 1978; Michielutte & Diseker, 1984-85). These studies involved physician assistant students and medical students, as well as practicing physician assistants, family

practice physicians, family practice residents, and dentists.

Kosberg (1983) has suggested that in addition to improvement in general societal attitudes toward elderly people, three specific approaches might be used to help promote positive attitudes among health care professionals. These are (1) formal education, (2) continuing education programs, and (3) staff assessment to identify individuals with positive attitudes.

Nurses' Attitudes toward Elderly People

Benson (1982) has emphasized that one issue of paramount importance is the fostering of positive attitudes among nurses in view of a pervasive "ageism" (Butler, 1975) in American society. Benson, in reviewing the nursing literature of the last two decades, found a growing awareness of this issue among nursing educators and practitioners, as well as an increasing commitment to the improvement of health care for older Americans. Much research, however, has implied that societal attitudes may be hindering this health care goal. For example, it has been noted that many nurses and nursing students tend to believe negative stereotypes and lack factual information about elderly people (Campbell, 1971; Coe, 1967; Green, 1981; Hart et al., 1976; Palmore, 1977; Williams, 1982; Williams et al., 1986), and several studies have reported that baccalaureate nursing students are not interested in

gerontological nursing as an area of specialization, preferring other areas of nursing specialization instead (Buschmann et al., 1981; DeLora & Moses, 1969; Gunter, 1971; Jaeger & Simmons, 1970; Kayser & Minnigerode, 1975; Knowles & Sarver, 1985; Shimamoto & Rose, 1987; Williams et al., 1986). Thirty-eight empirical studies of stereotyping by nurses and nursing students were critically examined by Ganong et al. (1987), and it was concluded that evidence does exist that students and nurses stereotype persons based on age.

A number of the more recent studies have contradicted the negative findings of earlier studies (Chandler et al., 1986; Downe-Wamboldt & Melanson, 1985; Olsen, 1982; Robb, 1979; Snape, 1986; Taylor & Harned, 1978). This may point to an increasing improvement in attitude toward elderly people among nurses and other health care providers as noted in the literature (Benson, 1982; Snape, 1986). A review of the literature since 1970 suggests a correlation between positive attitude formation among nursing students and practicing nurses and an increase in the number of nurses choosing to work with elderly people (Stanley & Burggraf, 1986). Coe (1967) found that attitudes of health professionals toward aging and older persons are closely bound to professional ideology, and Wilhite and Johnson (1976) found a positive correlation between faculty and student attitudes, suggesting that role modeling may be a

significant factor. Moreover, Futrell and Jones (1977) have emphasized that lack of role models hinders the recruitment of qualified personnel for the specialized field of geriatrics. Goodwin and Trocchio (1987) have stressed that nurses can help promote positive attitudes and behavior by displaying respect for older persons and acting as role models. If nursing educators, administrators, and practitioners can instill gerontological ideals in nursing students and also serve as role models, positive attitudes toward aging and elderly people may continue to increase.

Influencing Attitudes through Educational Programs

Many educational programs for health personnel who care for aging people are directed toward increasing the knowledge base of health care workers and implementing more positive attitudes toward elderly persons. These programs assume that more knowledge and positive attitudes regarding older individuals increase both the quantity and quality of care for elderly people.

After conducting a multidisciplinary gerontological training program for health care providers, Nodhturft et al. (1986) concluded that although many health professionals hold negative attitudes and stereotypic views of elderly people, educational programs can improve knowledge about and attitudes toward aging. Studies that focused specifically on nursing students and nurses have similarly demonstrated the positive effect of gerontologically oriented educational

programs (Green, 1981; Gunter, 1971; Heller & Walsh, 1976; La Monica, 1979).

Although some inconsistencies exist, in general the literature appears to indicate that gerontological/geriatric educational programs influence persons' knowledge, perceptions, and attitudes regarding aging and elderly people. Most educational programs focusing on cognitive aspects associated with understanding older persons appear to have a positive effect on nursing students and nurses. The implication of the influence of educational programs is the effect they might ultimately have on nursing specialization choice and working with elderly people.

Conclusions about Aging-Related Attitude Research

One primary area of question regarding aging-related attitude research is the accuracy and effectiveness with which assessment instruments measure true personal values and beliefs. It has been noted that most aging-related attitude research has utilized measures, such as self-report questionnaires, which are susceptible to conscious control of responses (Robb, 1979). Societal beliefs about elderly people are becoming more positive, raising the question of whether persons tested indicate actual beliefs or those which they feel are socially desirable. For example, neither the Tuckman-Lorge (1953) Attitude Questionnaire nor Kogan's (1961) Attitudes toward Old People Scale, two commonly used assessment instruments in aging-

related attitude research, incorporate controls for tendency of persons tested to respond in what they perceive to be a socially desirable manner or in terms of learned rather than actual beliefs, and very few of the studies of nurses' attitudes toward elderly people have reported using an external criterion to assess social desirability set. Moreover, the reliability and validity of aging-related attitude assessment instruments often come into question. For instance, the reliability of Kogan's scale was assessed as being only moderate at the time of its development (.73 to .83 for the negative scale, and .66 to .77 for the positive scale), and consequently very likely needs to be reevaluated in the context of contemporary usage.

Another significant factor to be considered in attitude research in general is the association between attitudes and behavior. It has proven difficult to demonstrate direct, consistent relationships between attitudes and behavior, and such relationships often tend to be dependent on the methods used to assess these associations. For example, Hatton (1977) failed to find a statistically significant relationship between registered nurses' attitudes toward elderly people (measured by Kogan's Attitudes toward Old People Scale) and quality of care (measured as performance of nursing functions) provided.

The social value of establishing the existence of a relationship between attitudes and behavior lies in the

ability to predict and ultimately influence behavior. With regard to gerontological nursing, this would imply translating positive attitudes toward elderly people into quality nursing care as defined, for example, in Standards and Scope of Gerontological Nursing Practice (American Nurses' Association, 1987). However, it has been noted that the influence of attitudes on the quality of care provided by health professionals is not known (Robb, 1979). For instance, Welsh (1973) did not find consistent correlations between favorability of attitudes and ratings of counselors' effectiveness with physically impaired clients. That is, counselors with negative attitudes were nonetheless able to provide effective service for these clients. The implication of such a finding is that the learning of a profession is essentially the learning of a standardized, professionally defined social role (e.g., the role of counselor, the role of physician, the role of nurse, etc.). Consequently, adequate preparation as a health care professional is assumed to ensure a separation of quality health care delivery from attitude. If this situation should indeed to be the case, with attitudes having little or no impact on behavior, then researchers might better spend less time studying attitudes and more time studying behavioral aspects of health care delivery to the elderly population.

Individual Characteristics Related to Health Care for Elderly People

The literature pertaining to attitudes toward aging has indicated that elderly people, as compared to younger people, are a less valued group. This circumstance, combined with structural factors such as comparably lower salary and fewer benefits, and less favorable work conditions and environment, would logically seem to put long-term care facilities in comparison to hospitals at a disadvantage in RN recruitment. A good question to ask, then, is who are the RNs that are being employed in long-term care facilities? In this regard, the literature below pertaining to individual characteristics of RNs who study aging and/or work with elderly people is reviewed. It is hoped that this review will provide a suitable reference point for comparing the results of the present study.

Hospital Registered Nurses

In a large sample study of RN recruitment and retention, specific sociometric, education, and practice variables of hospital employed nurses were reported (Whaley et al., 1989). The data for this study were drawn from the 1986 Biennial Survey of Illinois RNs, which was conducted for the Illinois Department of Registration and Education by the University of Illinois at Chicago. The data described the characteristics of nurses renewing their Illinois RN license. Characteristics were compiled for 12,234 RNs who

worked in suburban and urban hospitals in the Chicago metropolitan area.

Among the sociodemographic variables in the Whaley et al. study were sex, ethnic background, age, and marital status. Of the 12,234 RNs, 97.75% were females and 2.25% were males. The percentage who were of white, non-Hispanic ethnic background was 88.86%; 11.47% were of other ethnic background. With regard to age, 4.38% of the RNs were younger than 25 years, 71.27% were in the 25-44 years age range, 23.57% were in the 45-64 years age range, and .78% were 65 years of age or older. As for marital status, 71.15% of the RNs were married, 11.62% were widowed, divorced, or separated, and 17.23% were never married.

Education variables included level of basic nursing education, degrees earned after completion of nursing education, and current enrollment in a formal education program leading to an academic degree. Regarding basic nursing education, 45.03% of the nurses were prepared at the diploma level, 28.37% at the associate degree level, 26.43% at the baccalaureate degree level, and .17% at the master's degree level. Almost 20% of the RNs earned academic degrees after completion of their basic nursing programs, these being primarily baccalaureate and master's degrees in nursing. About 17% of the RNs were currently enrolled in a formal education program leading to an academic degree.

With respect to the type of position held, 71.90% of the RNs were employed in staff nursing positions. In the position of charge nurse or team leader were 7.27% of the RNs. A head nurse or assistant head nurse position was held by 7.87% of the RNs. In a position of administrator or assistant administrator were 6.19% of the RNs. Clinical specialist or practitioner positions were held by 3.97% of the RNs. Other positions were held by 2.80% of the RNs.

There are a couple of limitations to be noted with regard to the Whaley et al. study of hospital nurses. First, the geographic area where the hospitals were located was restricted to the Chicago metropolitan area. Second, all of the RNs in the study resided in suburban areas; the study did not include RNs who lived in Chicago's urban areas.

In a smaller and different study focusing on staff retention in a university medical center hospital located in a midwestern metropolitan area, some of the individual demographic and employment characteristics of all 59 RNs were recorded (Taunton et al., 1989). The average age of the RNs was 29.81 (SD = 7.27). With regard to level of education, 67% of the nurses held a baccalaureate degree or higher. The average number of years in the nursing profession was 6.86 (SD = 6.39). The average number of years employed in the hospital was 4.70 (SD = 4.29), and the average number of years in the current nursing position was

3.30 (SD = 4.23). The RNs in this study had a higher level of education than the hospital employed RNs in the Whaley et al. study, which may be due to the education characteristics of nurses who work in a university-based medical setting.

Long-Term Care Facility Registered Nurses

Using preliminary data from the 1985 National Nursing Home Survey (NNHS), Strahan (1988) reported on characteristics of registered nurses in nursing homes. NNHS is a nationwide (excluding Alaska and Hawaii) sample survey of nursing and related care homes, their residents, and staff conducted periodically by the National Center for Health Statistics. The NNHS was conducted from August 1985 through January 1986.

The nurses reported on by Strahan were a stratified random sample of 2,763 RNs. Nursing care has traditionally been provided by females, and this is reflected in the ratio of female to male RNs working in nursing homes in 1985; only 2% of the more than 103,000 RNs in nursing homes were males, as compared to 98% females. Minority groups made up a much smaller proportion of RNs working in nursing homes than their representation in the overall population; about 90% of the RNs in nursing homes were white, non-Hispanic nurses. This rate was about the same as that in hospitals (Jones et al., 1987), and studies indicate that although minority individuals as a whole are more likely than white non-Hispanic persons to serve the older age groups, this care is

generally in a setting other than a hospital or nursing home (Feldbaum & Feldbaum, 1981; Smith, et al., 1982).

The median age of the RNs in 1985 National Nursing Home Survey was 45. Of these nurses, 75% were under age 55. More than two-thirds of the RNs working in nursing homes were married. RNs who were divorced, separated, or never married worked full-time more frequently than married or widowed RNs. More than one-half of the RNs had no children living at home; of the RNs who had children living at home, most were of school age (5-17 years old). Most of the RNs surveyed had a diploma level training in nursing, with 56% of the RNs working in nursing homes having a 3-year diploma program as the highest nursing-related education. An associate degree was held by 22% of the nurses, and 18% held a bachelor's degree. Less than 3% of the RNs held a master's degree.

In summarizing the characteristics of RNs who worked in nursing homes in 1985, the typical RN employed in a nursing home in 1985 was female, married, white, older than the average RN, and had been working in her profession for 10 years or more. Studies have indicated that nursing students tend to associate negative stereotypes with caring for aged persons and that older health care providers, regardless of their profession, are more likely than their younger colleagues to view elderly people favorably (Feldbaum & Feldbaum, 1981; Smith et al., 1982).

In studying the association between individual characteristics and registered nurses' employment in a specifically designated gerontological care setting such as a long-term care facility as opposed to a hospital, there is the question of the exact role that individual factors play. That is, do certain individual factors directly influence the choice of working in long-term care facilities or is this choice indirectly influenced through such social psychological factors as attitudes? The literature regarding nurses' attitudes toward aged individuals has been reviewed and research findings have been shown to be inconsistent and contradictory. The accuracy of attitude assessment has been a concern and, moreover, a definite link between attitudes and behavior has been difficult to establish.

Although numerous studies in this specific area have been conducted, the present study acknowledges the problems associated with attitude research. Social structural factors such as those discussed earlier--organizational factors, pay and benefits, employment setting status, and the characteristics of the patient population--present a more concrete area of study, but this also is not an area intensively pursued in this investigation, with the specific exception of employment setting, long-term care facility versus hospital.

A literature review of gerontological nursing covering 1979-1984 revealed a preponderance of studies of attitudes among nurses and nursing students to the exclusion of other topics (Burnside, 1985). A similar review covering 1984-1988 showed a shift to mainly studies of physical problems of elderly people (Haight, 1989). What is recognized in the present investigation is the paucity of existing studies dealing with individual demographic and employment characteristics as they relate to RNs working in long-term care facilities as opposed to hospitals. Specifically, there is a lack of research employing a large, representative sample in which nurses working with elderly people in long-term facilities are compared with nurses working in other settings, particularly hospitals. These factors, along with theoretical relevance of the study and its potential to be used as a comparative frame of reference for the evaluation of more current data, constitute the contribution of the present study to the existing literature.

CHAPTER 3
CONCEPTUAL FRAMEWORK

The concept of marginality was originally delineated by Stonequist (1937) in his study of the process of acculturation. Stonequist's approach to marginality focused on the "marginal man" as a social product of acculturation, such as inevitably results when people of different races and different cultures--and consequently different social statuses--come together to carry on a common life. Stonequist maintained that persons who through migration, education, marriage, or other influence leave one social group or culture without making a satisfactory adjustment to another, find themselves on the margin of each but a member of neither. Thus, the marginal man as conceived in Stonequist's study is the person tenuously poised between two or more social worlds, where group membership is based on social status and where exclusion removes the person from a system of group relations.

Stonequist's study set the stage for marginality to be more fully and widely explored, although essentially as a social relationship phenomenon. Then, as conceptual analysis and empirical work on the theme of marginality expanded, further distinctions and nuances were added.

Consequently, it became apparent that differentiation should be made between marginality as a social situation, considered the result of historic and structural conditions, and marginality at the individual or personality level, which was considered to be a psychosocial and cultural problem (Germani, 1980).

It was Germani's approach to marginality that emphasized a wider application of the concept. The importance of Germani's work was that it broadened the concept of marginality so that it could be modeled as a multidimensional phenomenon, not just strictly as a social relationship phenomenon. That is, Germani stressed that under the global term, "marginality," different types of marginality could be distinguished. The plural dimensional conception of marginality, accepted whenever different forms of marginality (e.g., economic, political, cultural, educational) are considered, recognizes different dimensions of marginality, as well as different degrees within the same dimension. This kind of approach makes it possible to make more specific and selective applications of the concept of marginality, including more succinct definitions and explanatory factors.

Germani's general conception of marginality centers around the exercise of roles in different institutions and spheres of individual and collective life such that one might think, for example, of roles in family life, in the

productive subsystem, or in the political subsystem. In Germani's scheme, marginality is imputed through a comparison between a de facto situation and a certain model--the role set which the individual or group should exercise according to expected or desired criteria. Thus, one could discuss a marginality profile for individuals and groups which would examine the specific configuration that characterizes them in relation to the type and degree of participation they exercise, and in comparison to the type and degree that would correspond to them according to the model assumed.

Germani cited degree and form of participation in the productive or economic subsystem of society as one of the main categories used in observing marginality. An element essential to participation and marginality was identified as being "personal conditions," which Germani defined as those characteristics and capabilities that individuals ought to have in order to effectively exercise their given roles. "Objective resources" were also considered to be essential. These would be all material and nonmaterial elements necessary for participation to be effectively possible.

Another important factor in Germani's treatise on marginality is the relationship between modernization and marginality. Germani emphasized that marginality is one of the perspectives from which modernization can be approached. From Germani's point of reference, modernization involves

the social and human aspects of development, and the problems generated as dilemmas of the contemporary world. The fundamental fact which creates marginality and makes problematic its perception, according to Germani, is the asynchronous, or uneven nature of transition. From these asynchronies arise coexisting institutions, values, attitudes, patterns of behavior, structures, and groups or social categories which may not be appropriate or efficient for the times.

In modern society, psychosocial inadequacy may make effective participation difficult or improbable. Germani points out that psychosocial and individual factors cannot be dismissed a priori when integrated into a broader scheme of explanation which takes into consideration structural factors (e.g., economic-social, cultural) to explain the emergence and maintenance of situations of marginality. The persistence of a group participating only partially in a sector of society, perceived from the perspective of efficiency, can be considered as a limitation and threat for productive society to the extent that it impedes the optimization of existing human resources, thereby reducing its functionality. A modern society requires modern attitudes along with an adequate education to meet the demands of an increasingly complex technology.

It has been maintained that decline of the status of elderly people accompanied modernization (Achenbaum, 1978;

Cowgill, 1974). If that is the case, this situation would seem to place elderly people in a marginal category as valued members of society. The carry-over is that because of the devalued status of older people, particularly older people in irreversible declining health, long-term care facility employment can itself be considered a marginal occupational position because of the low status associated with it.

There are paradoxical aspects of modernization. On the one hand, modernization led to the devaluation of elderly people. At the same time, the higher standard of living and advanced medical technology resulting from modernization has led to a rapidly growing older population. The consequence of this growth phenomenon, however, has been a corresponding influx of elder people into long-term care facilities as inevitable decline in health occurs, leaving the dilemma of providing for them a level of efficient quality care.

Also relevant to the theory of marginality as it is applied to this study is Mizruchi's (1983) approach to the concept. Mizruchi was concerned with marginality in relation to given organizations in society, and perceived marginality as existing when persons are weakly tied to important social structures such as the family or work organizations, the latter of which is central to the study at hand. More specifically, Mizruchi was interested in the relationship between marginality and the short-term or long-

term imbalance between people and places, for example, shortages of labor to fill vacant positions. Important to Mizruchi were sociological questions pertaining to discrepancies between the available work force and structural opportunities, the societal dynamics which create these discrepancies, and the way they impact on and are responded to by diverse segments of society.

The present study recognizes the significance of Mizruchi's analysis of marginality, and has as a major and specific problem relevant in today's society--long-term health care for institutionalized elderly people. In terms of people-place imbalance, a rapidly increasing, homogeneous resident population is filling long-term care facilities and, although quality professional nursing care is badly needed in the long-term care setting, there appears to be a serious discrepancy between existing structural opportunity and the recruitment of well-qualified RNs to work in long-term care facilities. It is on this basis that it might reasonably be hypothesized that whereas hospitals are more likely to attract better-educated RN's who have a strong career commitment, given the previously cited negative factors associated with the long-term care setting, long-term care facility RNs are more likely to be nurses who have greater career marginality.

The theoretical approach to this study, then, focuses on marginality in a structural sense that is analogous to

that of microeconomics rather than in a social relationship sense. That is, certain individual RN characteristics can be thought of as human capital economic demand characteristics. A primary example is education. Presently, a higher level of education and the skills that accompany it are becoming more important for RNs in long-term care facilities. This is because of the need to be knowledgeable of the unique health needs of older people, and also because of the recent implementation by Medicare of the "Prospective Payment System," under which hospitals receive fixed amounts based on the principal diagnosis for each Medicare-covered hospital stay (Health Care Financing Administration, 1989).

With regard to the Prospective Payment System, since hospitals get a preset payment for a given condition no matter what length of time a patient remains at the hospital, the tendency has been to discharge patients more quickly than in the past in order to minimize loss and maximize profit (Donley & Flaherty, 1989; Hamilton & Wilson, 1989; Kayser-Jones, 1989; Walsh & Wilhere, 1988). When this situation occurs when elderly people are involved, discharge is frequently to a long-term care facility where skilled care may likely be required because the health condition was not completely dealt with at the hospital. A consequence of this discharge orientation is that the intermediate care-skilled care long-term care facility dichotomy that has

existed in the past has begun to shift in the direction of a single skilled care facility identity.

Intermediate care has essentially involved a more custodial type of care in which medically stabilized chronic conditions are prevalent. Skilled care, however, must accommodate acute care needs. Long-term care facilities have seen an increase in the number of acute illness patients who nurses' aides are not able to deal with as would have been possible in the intermediate care situation (Kayser-Jones, 1989). Also, the acute type of care requires greater technology, along with personnel knowledgeable in the use of such technology (Walsh & Wilhere, 1988).

Below, the level of education for RNs is discussed in relation to the quality of labor, and hence care, offered in long-term care facilities. From this discussion will emerge the awareness that a low level of education results in one facet, among others, of employment marginality for RNs.

It has been noted that an assumption prevails that health care services can be provided to elderly persons regardless of the knowledge held by service providers (Robb & Malinzak, 1981). However, when speaking of long-term care for aged people, knowledge appears to be an essential factor. It has been emphasized that a strategic influence over nurses' ability to provide quality care for older persons is the knowledge base used to guide nursing practice (Brower, 1988), and the expectation is that the level of

gerontological health care will improve as factual knowledge in the care of elderly people increases (Nkongho, 1988). Stanley and Burggraf have stated that "the importance of a strong knowledge of the unique needs of the elderly as a basis for providing quality care cannot be overstated" (1986, p. 32).

In providing long-term nursing care for older people, the knowledge level required of nurses has increased considerably over the past few years (Robb & Malinzak, 1981). There is a specific behavioral and biological knowledge about aging that serves as the basis for designing and implementing the nursing process, and failure to have an adequate and accurate understanding of the characteristics of older persons can negatively affect their care (Gunter & Estes, 1979; Kart, 1981). To cite an example of the unique knowledge required for adequately caring for elderly persons, when the nursing specialty, gerontological nursing, is mentioned in newspaper articles, it is presented as being a relatively high education specialty compared to other nursing specialties (Kalisch & Kalisch, 1985). Only a very small number of RNs who care for aged people, though, have gone as far in their education as a gerontological nurse specialty program, which makes the level of general nursing education even more important, since more gerontological content tends to be included in the higher levels of nursing education. However, it has been noted that in long-term

care facilities the number of RNs with baccalaureate degrees or higher is minuscule in comparison to the need (Nkongho, 1988).

In assessing the extent of gerontological nursing knowledge among nursing personnel, it was found that as educational preparation for nursing increased, so did, generally, mean knowledge scores (Robb & Malinzak, 1981). Reif (1982) has pointed out that more substantial preparation in gerontology and long-term care is provided in graduate level nursing programs. It has been noted that graduates of master's degree programs in nursing are prepared to function at a higher level of expertise (Martinson, 1984). Williams et al. (1986) have reported that nurses with master's degrees score higher on Palmore's (1977) Facts on Aging Quiz than do baccalaureate nursing students.

Evidence suggests that the attitudes that health professionals hold about older people influence the quality of the service they render (Hatton, 1977; Wolk & Wolk, 1971). Campbell (1971) has noted that advanced levels of education appear to be associated with decreased stereotyping of aged persons, and Kosberg et al. (1972) found that attitudes of professional staff members in a nursing home were significantly related to the amount of formal education. Similarly, Thorson et al. (1974) found, that among students and practitioners in service to elderly

people, better-educated persons had significantly more positive attitudes toward aged individuals.

Knowledge about aging and older persons seems to be a crucial factor in delivering quality health care to older people. It is therefore reasonable to take the position that nurses with limited general and/or nursing education are marginal from a job qualification standpoint. This is because nurses with a lower level of education can be considered less capable of providing a desired quality of care for elderly persons. Although the recruitment and retention of qualified nurses in long-term care is a critical concern (Nagy et al., 1987), it has been found that nurses with more formal education tend not to work with older people (Meyer et al., 1980). Consequently, in this respect career marginal nurses would be more likely to be found working in long-term care settings.

Continuing education programs offer another way of increasing the knowledge and skills of nurses. Nurses who do not maintain or update their knowledge and skills may well be considered marginal in terms of their job qualifications and capabilities when compared with nurses who take part in continuing education programs. The importance of continuing education has grown in the last half of the 20th century as a result of the rapid development of medical information and technology. Nursing information begins to become out of date after only about

two to two and one-half years (Williams, 1976). With advances in scientific knowledge and increasing changes in health care delivery, it has become essential that nurses maintain a current knowledge and practice base (Kristjanson & Scanlan, 1989).

Computer literacy has become more of a necessity for nurses, and it has been continuing education rather than standard educational programs that has played the major role in providing nurses with computer usage skills (Reynolds & Ferrell, 1989). Computers can increase the effective use of nursing resources and improve the quality of patient care (Packer, 1989).

An evaluation of education programs in long-term care settings has shown that continuing education is an effective means of influencing the knowledge and attitudes of nursing personnel, and has recommended it as a first step toward improving the quality of care of elderly long-term care facility residents (Almquist et al., 1981). Haley (1988) has emphasized that quality long-term care is dependent on committed staff members whose education continues throughout employment. In a study of the benefit of continuing education on RNs working in hospitals, it was found that the majority of these nurses perceived continuing education as positively affecting their practice (Keltner, 1983). Continuing education is particularly important for hospital

RNs, because of the higher level of skill required in acute care as opposed to chronic care nursing.

Improved technology has also become a significant factor in providing quality care for elderly people. As medical technology continues to advance and the population continues to age, nurses must increasingly be able to deal with the special health problems of older persons, such as cardiovascular and neurological conditions. This is particularly important for acute care nurses such as hospital RNs. Consequently, current nursing education must necessarily incorporate the operation and reading of complex equipment such as electronic monitors (Kirby, 1988). Younger RNs and RNs continuing on to higher levels of nursing education are the nurses most likely to have been exposed to training in the use of advanced equipment.

The importance of level of education in providing quality care for older persons has been discussed. Another important function that level of education serves is the ability to command interprofessional collaboration (Nkongho, 1988), which makes available a broader range of resources and makes health care more efficient. With higher education comes higher status, and it is this higher status that makes it possible for RNs to obtain a greater degree of interprofessional collaboration. This collaboration is heightened by the fact that the presence of physicians is

not nearly as great in long-term care facilities as it is in hospitals.

A lower level of knowledge or education is a major factor that may contribute to job marginality in terms of qualifications considered in the competition for higher pay, benefits, and status for RNs which hospitals are able to offer. Additional, and likely interacting, factors that may contribute to employment or career marginality among RNs are (a) employment continuity, (b) age, (c) marital status, (d) children living at home, and (e) work setting. These variables are more fully presented and discussed in Chapter 4, "Methods."

CHAPTER 4
METHODS

The study design is secondary data analysis of a preexisting data set. To analyze the data, the inferential statistical method of multiple logistic regression is employed.

Data

The data for this study are from the National Sample Survey of Registered Nurses II (Moses & Spencer, 1980), and are contained on National Technical Information Service public use tape number PB82-253410. This survey was conducted by the Research Triangle Institute of Research Park, North Carolina for the purpose of assessing the number and characteristics of the registered nurse population. Such an assessment was considered to be essential to a reliable evaluation of the nation's health resources and to a determination of whether these resources are adequate for meeting the health care needs of the nation. The survey questionnaire is presented in the Appendix of this study.

In the fall of 1980 questionnaires were mailed to a sample of 39,573 individuals having current licenses to practice as registered nurses. The total number of respondents was 30,642, yielding an effective response rate

of 80.0% after correction was made for the fact that 1,264 nurses held licenses from more than one state and therefore were duplicated on the mailing list. Responses to the survey were weighted so as to reflect the universe of registered nurses. The estimated number of RNs within the United States with licenses to practice in November, 1980 was 1,662,382. Of these, an estimated 1,272,851 RNs, or 76.6%, were actually employed in the field of nursing, with the remaining nurses being either unemployed or employed in a field other than nursing. The number of usable questionnaires for which data were recorded was 30,535, or 79.7% of the nurses surveyed. In the present study, only data for RNs working and/or living in the United States are processed. The number of nurses in this category totals 30,375, which is 99.5% of the nurses who returned usable questionnaires. The survey data include information on the demographic characteristics of the registered nurse population, their educational background, their type of nursing employment and functions performed, their hours of work and earnings, their activities if not employed in nursing, and their geographic location.

Sample Characteristics

Data were obtained from 30,375 registered nurses who were working and/or living in the U.S. in 1980. Of these nurses, 23,563 (77.63%) were employed in nursing as of November 15, 1980, with 67.86% being employed full-time and

32.14% part-time. The highest percentage (65.59%) of RNs employed in nursing worked in hospitals. The next highest percentage (8.07%) worked in long-term care facilities ("nursing homes" and "extended care facilities"). Other work situations for the RN's in this sample included (a) nursing education, (b) public/community health, (c) school nurse, (d) occupational health, (e) physician's or dentist's office, and (f) private duty. A staff or general duty position was held by 69.19% of the nurses, whereas 19.32% held an administrative, supervisory, or head nurse position.

Females comprised 97.26% of the sample, and the race classification of 93.49% of the sample was white, not of Hispanic origin. The median age of the sample was 38 years, with 26.77% of the nurses being less than 30 years old, 55.26% being less than 40 years old, and 75.33% being less than 50 years old. The percentage of nurses who were married was 71.80%; 13.76% were divorced, widowed, or separated and 14.44% were never married. The highest education related to nursing for 72.22% of the nurses was less than a baccalaureate degree. Of these nurses, 53.91% had a diploma in nursing and 18.31% had an associate degree in nursing. The percentage of nurses who had a baccalaureate degree in nursing or other related field was 22.75%, while 5.03% had a master's degree or doctoral degree. Of these, only 0.23% had a doctoral degree.

Variables

This study centers around differences in long-term care facility employment as opposed to hospital employment both in terms of employment characteristics of the two health care settings themselves and of specific individual demographic and employment characteristics of RNs who work in these settings. The theme of marginality is central to the study, and in this sense the marginal status of long-term care facility employment is considered, along with individual characteristics which would make an RN occupationally marginal from an employer's point of view, and RNs' employment characteristics which would make a nurse marginal from a career orientation or commitment standpoint.

The variables in this study are related to the concept of "career marginality." As a general concept in the study, career marginality is composed of: (a) individual demographic characteristics of RNs which would make a nurse less job qualified (e.g., a limited level of education) from an employer's standpoint when compared with more qualified RNs, or less able to be fully career committed from a personal standpoint (e.g., having family responsibility such as children); (b) employment characteristics of RNs which would be considered less than the ideal model or conception of career participation (e.g., part-time employment; lack of participation in continuing education programs); and (c) the lower status and comparably less materially rewarding (i.e.,

pay and benefits) employment setting of the long-term care facility.

The variables that follow are used to investigate some of the various dimensions of career marginality. The rationale behind their employment and the way in which the variables are operationalized accompany each variable listing.

Employment Setting

Employment setting, long-term care facility versus hospital, is a variable of central interest in this study, and consequently it is investigated both as a dependent variable and as an independent variable predictor of degree of career participation and also job change. Employment setting is important in the sense that the long-term care facility can be considered a somewhat marginal field of employment within the health care profession, and thus may have a greater likelihood of employing RNs who have career marginality characteristics.

Career Line

The "career line" variable is a combination of three of the variables presented below--full-time/part-time employment, percent of time employed in nursing since graduation from basic nursing education, and whether or not the RN had participated in any type of continuing education program during the past year. Creation of the career line

variable is meant to both provide the basis for a more concrete definition and serve as a direct empirical indicator of career orientation among RNs. By definition, a nonmarginal career line would be full-time employment, a relatively high percentage of time employed in nursing since graduation from basic nursing education, and participation in continuing education. The situation of not having these three positive career line characteristics is defined as having a marginal career line, or having "career marginality."

In the operationalization of the career line variable only extreme cases (all coded positive or all coded negative on the three variables comprising it) were selected. The rationale for this particular mode of operationalization is that it compares those RNs who are most different with regard to career line and eliminates RNs in the "grey area" in between. The alternative approach would have involved comparing nurses coded positive on all three variables comprising career line with nurses coded negative on at least one of the variables.

Formal Education

Two variables of interest relate to formal education. The first variable indicates the highest education related to nursing that the RN has received. The supposition is that, in today's job market, nurses who receive only a diploma or associate degree as opposed to a baccalaureate

degree or higher may have less career commitment, or less potential for career advancement, and may thus be marginal in this respect. The second variable related to formal education is whether or not the nurse is currently enrolled in a formal education program leading to an academic degree. Not currently being enrolled in a formal education program leading to an academic degree would appear to indicate career marginality for nurses with a lower level of education. That is, RNs who do not extend their educational attainment beyond a diploma in nursing or an associate degree in nursing may be limited in their job performance qualifications and job promotion potential.

Continuing Education

This variable indicates whether or not the nurse has participated in any type of continuing education program during the past year. Since a central purpose of continuing education is to keep abreast of recent developments in a given field, it is an important factor in maintaining quality of care in the nursing profession (Day, 1989), and not participating in continuing education might be indicative of occupational marginality.

Continuing education will be used as an independent variable in only one of this study's four multiple logistic regression equations. Although the data for this study are from 1980, research involving this variable and using more current data should take into consideration the fact that 13

states now require continuing education for all registered nurses (Newbern, 1989). Florida, for example, is one of the states that sets trends for the rest of the country (Naisbitt, 1982). Feeling that rapidly changing technology results in complexity and transition within the health care field which necessitates continuous updating of nursing knowledge and skills, in 1986 the Florida Board of Nursing adopted a continuing education requirement for RNs (Penny, 1989). In Indiana, mandatory continuing education for RNs was implemented after a study (Puetz, 1983) concluded that the least educated nurses were the least likely to attend continuing education activities (Newbern, 1989).

Employment Continuity

Five employment continuity variables are used in this study. The first indicates the percentage of time (measured in years) that the RN has worked as a nurse since graduation from basic nursing education. A limited percentage of time employed would be a case of partial participation in the RN work force and might be indicative of limited career commitment. The second variable indicates whether or not there has been a change in the location of the nurse's employment within the past year. The literature implies a high rate of turnover of personnel in long-term care facilities, and job change in conjunction with working in this particular employment setting might be construed as one indicator of career marginality (Giordano & Panfil, 1987;

Kiyak & Kahana, 1987). However, although job location change could possibly be an indicator of career discontinuity, this is not necessarily so. For instance, although job change might be indicative of an unstable or unestablished career situation, at the same time it could be a positive career move indicating promotion or improvement in the career situation. Also, the change might be no worse than a status quo transition, for example, when the establishment at which the RN worked has relocated.

A third employment continuity variable is full-time versus part-time employment. Part-time employment might be considered an indicator of career marginality, since most employment situations are oriented toward full-time employment. Part-time employment, however, would not necessarily be an indicator of less career commitment for some nurses. For example, RNs currently pursuing an academic degree full-time might be very career oriented, and pursuing the degree might well be an indication of this.

Whether or not the RN was employed in nursing one year prior to the time of the survey is a fourth employment continuity variable. However this limited single point check variable may not have as much relevance as, for example, the longer time span variable of percentage of time the RN has been employed in nursing since graduation from basic nursing education. The fifth employment continuity variable, being employed versus not employed, compares two

extremes, with particular interest in the characteristics of nurses who have an RN license, but who are nonetheless unemployed.

Age

Older nurses, as opposed to younger nurses, are closer to the end of their career and thus from an employment standpoint might be considered marginal. For example, age might be a factor in the situation where a nurse attempts to resume working after raising a family, since there could be employer preference for younger persons who are more likely to have had exposure to new technology. Marginality for older nurses might be of additional concern in the presence of limited education or having returned to work for financial reasons following widowhood, divorce, or separation. In the latter case, returning to work out of financial necessity might bring with it limited employment commitment. Age, along with education, may be the two most salient factors influencing employers' personnel decisions, since these factors are so readily noticeable during the employee application process.

Marital Status

Marital status by itself would not be assumed to be a career marginality variable. However, it might be a marginality indicator in the presence of children living at home or among older nurses. For example, for older RNs who

are widowed, divorced, or separated, the absence of a spouse's income may be an influential factor in returning to or continuing to work, and in terms of job qualifications these nurses might not be knowledgeable with regard to the latest nursing technology and may be only diploma level RNs. For younger single RNs with children living at home a similar financial factor may exist, but these nurses may be more up-to-date on new technology and may possess a higher level of education.

A factor to consider in the marital status situations noted is differences in motivation. The extrinsic motivational factor of monetary reward may operate for many older unmarried RNs and also for younger single RNs with children. For other nurses the intrinsic motivational factor of personal satisfaction in performing their occupational roles may be of paramount importance. Attempting to determine motivational reasons for nurses' employment, however, is difficult, and one limitation of the present study is the lack of such information in the data.

Children Living at Home

In terms of career marginality, this variable would appear to assume particular relevance when linked with marital status. Participation in the RN work force may be interrupted or even ended for those women who have the responsibility of raising children. Ending of an RN career following the birth of children would be more expected for

married women, because spouses' income may be adequate to maintain the household. Actually, ending an RN career because of the responsibility of children is the ultimate degree of career marginality, because it signifies total lack of participation in the professional nurse role.

For single women not having the benefit of spouses' income, a return to work following childbearing would be more likely. Nurses who are single parents with children living at home may be working largely because of financial necessity, and the responsibility of children may interfere with continuing education participation or pursuing a higher academic degree. In this situation RNs would be marginal from the career commitment or improvement standpoint.

Prediction Equations and Hypotheses

Prediction Equations

Utilizing various combinations of the variables presented above, equations are analyzed in terms of their function in predicting the probability or likelihood of the opposing categories of the dependent variables. Since sample regression equations will be used to estimate population regression equations, the equations are prediction equations in the sense that their independent variables, or predictors, are used to generate predictions about the dependent variables of interest. Statistical

findings for the equations are reported in the "Results" chapter of this study.

The first prediction equation designates employment setting as a dependent variable. Individual demographic characteristics, in combination with employment characteristics of RNs, are used as predictors of long-term care facility employment. Demographic characteristics include education, age, marital status, and children living at home. Independent variables classified as employment characteristics include full-time/part-time employment, percent of time employed as a nurse since graduation from basic nursing education, whether or not the RN was employed in nursing the previous year, whether or not the RN participated in any type of continuing education program during the past year, and whether or not the RN was currently enrolled in a formal education program leading to an academic degree.

The second prediction equation has career line as the dependent variable. In this equation, employment setting is treated as an independent variable, along with education, age, and children living at home. In the third prediction equation being employed versus unemployed is the dependent variable, and education, age, marital status, and children living at home are the independent variables. The fourth prediction equation employs as the dependent variable whether or not the RN had experienced a job location change

within the past year. Employment setting, education, age, and full-time/part-time employment are the independent variables.

Figures 1-4 give a diagrammatic representation of the four prediction equations used in this study.

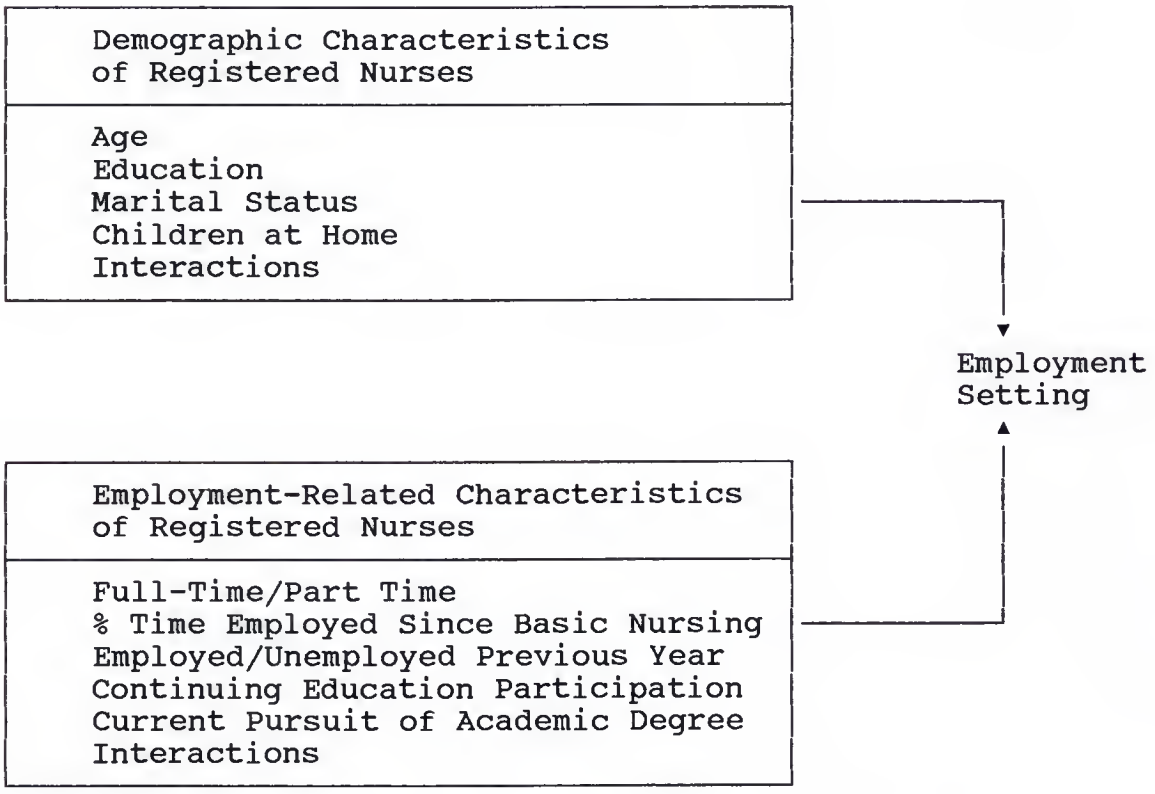

Figure 1. Predictors of long-term care facility vs. hospital employment setting.

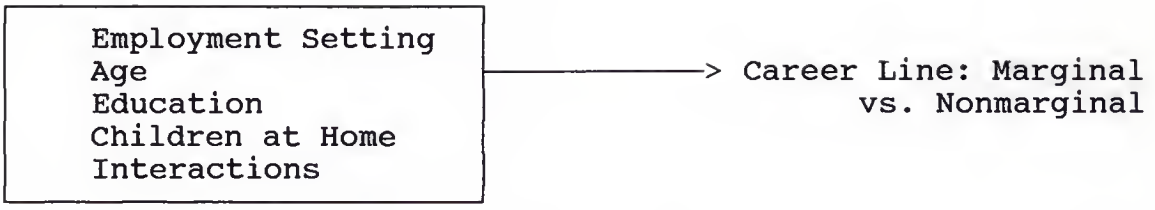

Figure 2. Predictors of career line

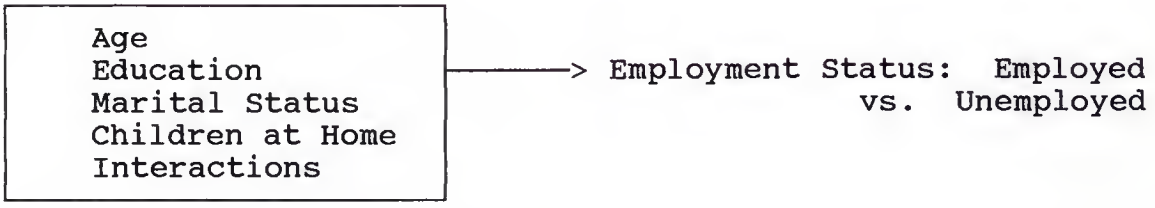

Figure 3. Predictors of employment status

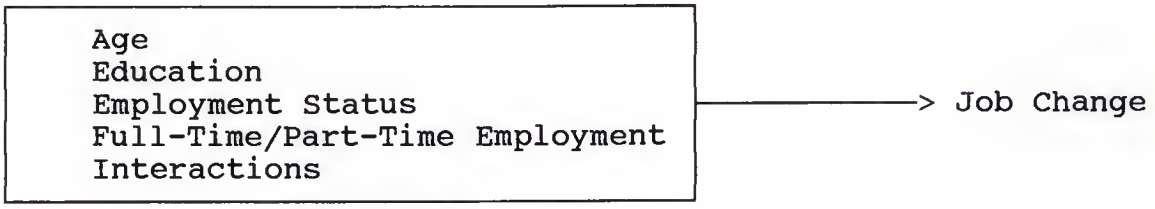

Figure 4. Predictors of job change

Hypotheses

Although in an effort to avoid unnecessary repetition the research hypotheses presented below are stated in a manner such that the dependent variables are grouped in

single statements, the supposition is that each dependent variable individually will be statistically significant in influencing the independent variable. With regard to the way in which the independent variables were dichotomized, the rationale for variable categorization is presented in the "Statistical Analysis" section of this chapter.

As for the demographic characteristic variables in the first prediction equation, it is hypothesized that RNs who have less than a baccalaureate degree level of education and who are 45 years of age or older have a greater likelihood of working in long-term care facilities than RNs who have a baccalaureate degree or higher level of education and who are younger than 45 years of age. Also, although marital status is not hypothesized to have a main effect in predicting long-term care facility employment, it is hypothesized to interact with age and also with children living at home. Here, it is hypothesized that single RNs 45 years of age or older, and single RNs who have children living at home are more likely to be employed in long-term care facilities than in hospitals.

With respect to the employment characteristic variables in the first prediction equation, it is hypothesized that RNs who are employed part-time, who have been employed in nursing less than 80% of the time since graduation from basic nursing education, who were not employed in nursing the previous year, who did not participate in any type of

continuing education during the past year, and who are not currently pursuing an academic degree, have a greater likelihood of being employed in long-term care facilities than in hospitals.

In terms of the second prediction equation, it is hypothesized that RNs who are employed in hospitals, who have higher than a diploma level of education, who are younger than 45 years of age, and who have no children living at home will have a greater likelihood of having a nonmarginal career line than RNs who work in long-term care facilities, who hold only a diploma in nursing, who are 45 years of age or older, and who have children living at home.

With regard to the third prediction equation it is hypothesized than RNs who have less than a baccalaureate degree level of education, who are 45 years of age or older, who are married, and who have children living at home will have a greater likelihood of not being employed than RNs who have a baccalaureate degree or higher level of education, who are younger than 45 years of age, who are not married, and who do not have children living at home.

As for the fourth prediction equation it is hypothesized that RNs who work in long-term facilities, who have less than a baccalaureate degree level of education, who are 45 years of age or older, and who are employed part-time have a greater likelihood of having had a job location change within the past year than RNs who work in hospitals,

who have a baccalaureate degree or higher level of education, who are younger than 45 years of age, and who work full-time.

Statistical Analysis

The data analysis approach employed in this study is logistic regression analysis (Agresti & Finlay, 1986; Cleary & Angel, 1984; Hanushek & Jackson, 1977). This approach was selected because the dependent variables are dichotomous categorical variables. Computer analysis of the data using the Northeast Regional Data Center facilities at the University of Florida employed the Statistical Analysis System LOGIST procedure (Harrell, 1986), which fits a logistic multiple regression model to a single binary (0, 1) dependent variable. Except for the career line dependent variable, the category of each dependent variable conceptualized as marginal was coded "1," with the opposing nonmarginal category being coded "0." For career line, the reverse coding pattern was adopted. That is, in this situation nonmarginal career line was coded "1" and marginal career line was coded "0." In an effort to maximize category frequencies the independent variables were also dichotomized (although some--"yes" versus "no"--responses were inherently dichotomous) and coded as "0" and "1." Again, as in the case of the dependent variables, and again with the exception of the career line equation, the independent variable categories which represented marginal

characteristics were coded "1," and the nonmarginal categories were coded "0."

The two categories of age were designated as those nurses younger than age 45 and those 45 and older. This point of division was selected because 45 years was the median age of long-term care facility RNs. Priority was given to long-term care facility RNs in dichotomizing variable categories because these nurses comprised only 11% of the study sample. Education was dichotomized between less than a baccalaureate degree (diploma in nursing or associate degree) and baccalaureate degree (in nursing or other related field) or higher. This dichotomization was chosen because the nursing literature has stressed the importance of a baccalaureate degree or higher level of education in exposing nurses to more gerontological content. Whether or not the RN was currently enrolled in a formal education program leading to an academic degree and whether or not the nurse had participated in any type of continuing education program during the past year simply involved a "yes" or "no" response.

Whether or not the nurse was employed in nursing one year ago also involved a "yes" or "no" response. Full-time or part-time employment categorization was according to whether or not the RN was scheduled to work for the normal full work week throughout the normal work year as defined by the employing institution. The variable, percentage of time

(based on years) that the RN has been employed as a nurse since graduation from the basic nursing education program was dichotomously divided between nurses who had worked 80% of the time or more and nurses who had worked less than 80% of the time, since 46% of long term care facility RNs had been employed less than 80% of the time and 54% had been employed 80% or more of the time.

The job location change within the past year variable was inherently dichotomized in terms of being either a "yes" or a "no" category, as was also the employment status variable, currently employed or not currently employed. The career line variable, being a combination of the three variables full-time/part-time employment, percent of time employed as a nurse since graduation from basic nursing education, and participation in continuing education, was dichotomized into nonmarginal and marginal career line categories. That is, an RN with a nonmarginal career line would be an individual who was employed full-time, had been employed in nursing 80% or more of the time since graduation from basic nursing education, and who had participated in some type of continuing education program during the past year. Constituting a marginal career line would be part-time employment, having been employed less than 80% of the time since graduation from basic nursing education, and not having participated in continuing education during the past year.

The final two independent variables were marital status and children living at home. The expectations for these two variables involve the interaction of marital status and age, and marital status and children living at home. The dichotomization of age has already been explained. Marital status was categorized according to whether the nurse was married, or was widowed, divorced, separated, or never married. The rationale for this particular marital status dichotomization was to differentiate between nurses who might benefit from the spouses' income and those who do not, especially in the presence of the financial responsibility of having children living at home. In adhering to the chosen method of dichotomizing all variables, and taking into consideration the somewhat confounding nature of the original categorization of the children living at home variable (see Table 14, p. 87), this variable was simply dichotomized in terms of whether there were or were not children living at home most of the time. The basic concern with the children living at home variable was whether or not there existed the financial and parenting responsibilities entailed by having children at home.

Below are tables displaying the categorization frequencies of the variables, in addition to employment setting, used in this study. Since the comparative scheme of the study revolves around long-term care facility employment as opposed to hospital employment, the variables

are cross-tabulated with employment setting. The employed versus the unemployed variable, however, is not cross-tabulated with employment setting, because the unemployed category of this variable has no corresponding work setting classification.

The higher missing values for the two variables, employed in 1979 and percent of time employed as a nurse since graduation from basic nursing education, are due to nurses who received their first RN license in 1980 and nurses employed in nursing for less than one year not being included as part of these variables. Similarly, since by definition the career line variable involved simultaneously falling into either all three marginal categories, or all three nonmarginal categories, of the three variables of which career line was comprised, many RNs were deleted from the analysis of the career line equation. For example, only RNs who were employed full-time, who had worked 80% or more of the time as a nurse since graduation from basic nursing education, and who had participated in some type of continuing education program within the past year were included in the nonmarginal career line category. The chi-square statics accompanying Table 1 through Table 11 indicate statistical significance, with the exception of Table 10, "Registered Nurses by Work Setting and Job Location Change."

Table 1: Registered Nurses by Work Setting and Age

Work Setting	Age		Total
Frequency Row Percent	Under 45 Years	45 Years & Older	
Hospital	11,828 78.36	3,267 21.64	15,095
Long-Term Care Facility	909 49.14	941 50.86	1,850
			16,945

chi-square = 753.91 (df = 1, p < .001)
frequency missing = 312

Table 2: Registered Nurses by Work Setting and Highest Education Level

Work Setting	Education		Total
Frequency Row Percent	Less Than a Baccalaureate Degree	Baccalaureate Degree or Higher	
Hospital	11,165 73.00	4,129 27.00	15,294
Long-Term Care Facility	1,636 87.07	243 12.93	1,879
			17,173

chi-square = 174.44 (df = 1, p < .001)
frequency missing = 84

Table 3: Registered Nurses by Work Setting and Current Enrollment in an Academic Degree Program

Work Setting	Current Enrollment in Academic Degree Program		Total
Frequency Row Percent	Yes	No	
Hospital	1,847 12.30	13,165 87.70	15,012
Long-Term Care Facility	103 5.69	1,706 94.31	1,809
			16,821

chi-square = 68.82 (df = 1, p < .001)
frequency missing = 436

Table 4: Registered Nurses by Work Setting and Participation in Continuing Education

Work Setting	Participation in Continuing Education		Total
Frequency Row Percent	Yes	No	
Hospital	13,003 85.95	2,126 14.05	15,129
Long-Term Care Facility	1,406 75.96	445 24.04	1,851
			16,980

chi-square = 128.06 (df = 1, p < .001)
frequency missing = 277

Table 5: Registered Nurses by Work Setting and Whether or Not Employed in 1979

Work Setting	Employed in 1979		Total
Frequency Row Percent	Yes	No	
Hospital	13,486 94.71	754 5.29	14,240
Long-Term Care Facility	1,679 90.76	171 9.24	1,850
			16,090

chi-square = 47.11 (df = 1, p < .001)
frequency missing = 1,167

Table 6: Registered Nurses by Work Setting and Employment Status

Work Setting	Employment Status		Total
Frequency Row Percent	Full Time	Part Time	
Hospital	10,551 69.02	4,736 30.98	15,287
Long-Term Care Facility	1,028 54.68	852 45.32	1,880
			17,167

chi-square = 156.77 (df = 1, p < .001)
frequency missing = 90

Table 7: Registered Nurses by Work Setting and Percent of Time Employed in Nursing Since Graduation from Basic Nursing Education Program

Work Setting	Percent of Time Employed		Total
Frequency Row Percent	Less Than 80%	80% or More	
Hospital	2,470 18.16	11,131 81.84	13,601
Long-Term Care Facility	790 45.64	941 54.36	1,731
			15,332

chi-square = 692.53 (df = 1, p < .001)
frequency missing = 1,925

Table 8: Registered Nurses by Work Setting and Marital Status

Work Setting	Marital Status		Total
Frequency Row Percent	Married	Widowed, Divorced Separated, Never Married	
Hospital	10,124 66.36	5,133 33.64	15,257
Long-Term Care Facility	1,369 73.05	505 26.95	1,874
			17,131

chi-square = 33.89 (df = 1, p < .001)
frequency missing = 126

Table 9: Registered Nurses by Work Setting and Children Living at Home

Work Setting	Children Living At Home		Total
Frequency Row Percent	Yes	No	
Hospital	7,991 53.47	6,954 46.53	14,945
Long-Term Care Facility	1,127 62.27	683 37.73	1,810
			16,755

chi-square = 50.36 (df =1, p < .001)
frequency missing = 502

Table 10: Registered Nurses by Work Setting and Job Location Change

Work Setting	Job Location Change		Total
Frequency Row Percent	Yes	No	
Hospital	1,433 10.63	12,043 89.37	13,476
Long-Term Care Facility	181 10.78	1,498 89.22	1,614
			15,155

chi-square = .034 (df = 1, p = .854)
frequency missing = 10

Table 11: Registered Nurses by Work Setting and Career Line

Work Setting	Career Line		Total
Frequency Row Percent	Nonmarginal	Marginal	
Hospital	7,032 96.61	247 3.39	7,279
Long-Term Care Facility	492 79.61	126 20.39	618
			7,897

chi-square = 365.60 (df = 1, p < .001)
frequency missing = 9,360

Table 12: Employed and Unemployed Registered Nurses

Frequency Row Percent	
Employed	23,563 77.6
Unemployed	6,791 22.4
Total	30,354

frequency missing = 21

Logistic analysis is useful in fitting a logistic regression model to a binary dependent variable. Whereas general linear models rest on the assumptions concerning linearity and the distribution of the error terms in the model, logistic models are based on the assumption that the underlying relationship can be represented by a logistic function (Theil, 1970). Such a function is sigmoid or S-shaped, lies between zero and one, and has its maximum slope in the midrange of X, thus conforming to what might be expected of a probability. For dichotomous dependent variables, logistic regression analysis models the way in which the proportion of responses in one of the categories ("1" response) is dependent on the values the independent variables. If $\pi = E(Y)$ denotes the proportion of "1" responses in the population, then π also represents the probability that a randomly selected individual falls into the "1" response category, and this probability varies according to the values of the independent variables. The multiple logistic regression model has the form $\log [\pi/(1-\pi)] = \alpha + \Sigma \beta X$, where $\log [\pi/(1-\pi)]$ is the logistic transformation or "logit." The logit is the log of the odds of falling into one group as opposed to the other.

CHAPTER 5
RESULTS

The nurses analyzed in this study included 15,367 RNs who worked in hospitals and 1,890 RNs who worked in long term care facilities. Of the combined group of hospital and long-term care facility RNs, 89% worked in hospitals whereas 11% were employed in long-term care facilities. In the various fields of employment, 66% of the RNs who were employed in 1980 worked in hospitals, and eight percent worked in long-term care facilities. Table 13 indicates the distribution of RNs in different fields of employment in 1980.

Table 13: Registered Nurses 1980 by Field of Employment

Field of Employment	Frequency	Percent	Cumul. Frequency	Cumul. Percent
Hospital.....	15,367	65.6	15,367	65.6
Long-Term Care Facil.	1,890	8.1	17,257	73.7
Nursing Education....	928	4.0	18,185	77.6
Public/Commun. Health	1,611	6.9	19,796	84.5
School Nurse.....	772	3.3	20,568	87.8
Occupational Health..	527	2.2	21,095	90.0
Physician's or Dentist's Office...	1,426	6.1	22,521	96.1
Private Duty.....	319	1.4	22,840	97.5
Other.....	588	2.5	23,428	100.0

Frequency missing = 135

Demographic Characteristics of RNs

Females comprised 96.37% and males 3.37% of the hospital RNs, whereas of the long-term care facility RNs 98.40% were females and 1.60% were males. The mean age of the hospital RNs was 35.53, compared to a mean age of 44.90 for long-term care facility RNs. Of the hospital RNs, 66.36% were married, 13.37% were widowed, divorced, or separated, and 20.27% were never married. As for the long term care facility RNs, 73.05% were married, 18.41% were widowed, divorced or separated, and 8.54% were never married. With regard to children living at home, 46.53% of the hospital nurses had no children living at home as opposed to 37.73% of the long-term care facility RNs having no children living at home. Of the hospital RNs, 7.85% were non-Caucasian, whereas 5.27% of the long-term care facility RNS were non-Caucasian. As for education, 24.27% of the hospital RNs, as opposed to 11.82% of the long-term care facility RNs, had a baccalaureate degree in nursing or other related field. The mean number of years since graduation from basic nursing education was 12.10 for hospital RNs and 21.64 for long-term care facility RNs. The mean for the survey question, "year in which nurse received highest nursing-related degree," was 1968 for hospital RNs and 1959 for long-term care facility RNs. Of the hospital RNs, 12.30% were currently enrolled in a formal education program

leading to an academic degree; this contrasts with 5.69% of the long-term care facility RNs.

Table 14 gives comparisons of the demographic characteristics of hospital and long-term care facility RNs. The chi-square statistics in the table indicate that for each characteristics there is a significant difference between long-term care facility RNs and hospital RNs.

Employment Characteristics of RNs

Table 15 contains comparisons of some of the employment characteristics of hospital and long-term care facility RNs. With regard to employment status, 69.02% of the hospital RNs were employed full-time, whereas 54.68% of the long-term care facility RNs were employed full-time. Of the hospital nurses, 6.61% had less than one year experience as an RN, as opposed to 2.29% of the long-term care facility RNs. The mean number of years hospital nurses had worked for pay as an RN since graduation from basic nursing education was 11.30; the mean number of years for long-term care facility RNs was 15.84. The percentage of hospital nurses receiving their first RN license in 1980 was 7.33%, whereas this percentage for long-term care facility nurses was 2.06%. Whereas 70.46% of the hospital RNs were employed in nursing 80% or more of the time since graduation from basic nursing education, the percentage for long-term care facility RNs was 43.91%. Of the hospital RNs, 4.91%, as opposed to 9.05%

Table 14: Demographic Characteristics of Registered Nurses by Work Setting

RN Characteristic	Hospital Number	Hospital Percent	Long-Term Care Facility Number	Long-Term Care Facility Percent
Sex				
Female.....	14,694	96.37	1,841	98.40
Male.....	553	3.63	30	1.60
	chi-square = 20.74 (df = 1, p = .000)			
Race and Ethnicity				
White, not Hispanic...	13,999	92.15	1,763	94.73
Black, Hispanic, other	1,193	7.85	98	5.27
	chi-square = 15.86 (df = 1, p = .000)			
Age				
Less than 25 years....	2,038	13.50	70	3.78
25-44 years.....	9,790	64.86	839	45.35
45-64 years.....	3,170	21.00	844	45.63
65 years and older....	97	0.64	97	5.24
	chi-square = 951.47 (df = 3, p = .000)			
Marital Status				
Married.....	10,124	66.36	1,369	73.05
Widowed, divorced, separated.....	2,040	13.37	345	18.41
Never married.....	3,093	20.27	160	8.54
	chi-square = 162.63 (df = 2, p = .000)			
Ages of Children at Home				
No children at home...	6,954	46.53	683	37.73
All < 6 years old.....	2,329	15.58	142	7.85
All 6 years and older.	4,466	29.88	841	45.91
Some < 6 and some r 6	1,196	8.00	154	8.51
	chi-square = 224.67 (df = 3, p = .000)			
Highest Education				
Diploma in nursing....	7,445	48.68	1,318	70.14
Associate degree.....	3,720	24.32	318	16.92
Baccalaureate degree..	3,711	24.27	122	11.82
Master's degree.....	413	2.70	21	1.12
Doctorate.....	5	0.03	0	0.00
	chi-square = 320.39 (df = 3, p = .000)			

Note: In Table 14 education chi-square was computed with master's and doctorate categories combined due to low doctorate frequencies.

Table 15: Employment Characteristics of Registered Nurses by Work Setting

Employment Characteristic	Hospital Number	Hospital Percent	Long-Term Care Facility Number	Long-Term Care Facility Percent
Type of Position				
Staff or general duty..	11,066	72.13	1,015	53.79
Head nurse or assistant	1,342	8.75	109	5.78
Supervisor.....	934	6.09	237	12.56
Administrator or assist.	459	2.29	394	20.88
Other.....	1,541	10.74	132	6.99
	chi-square = 1,303.83 (df = 4, p = .000)			
Full/Part Time				
Full-time.....	10,551	69.02	1,028	54.68
Part-time.....	4,736	30.98	852	45.32
	chi-square = 156.77 (df = 1, p = .000)			
% Time Employed as Nurse Since Graduation				
Less than 80%.....	3,304	22.60	952	53.67
80 or greater %.....	10,297	70.46	779	43.91
RN employed < 1 year..	1,014	6.94	43	2.42
	chi-square = 771.99 (df = 2, p = .000)			
Year of 1st RN License				
1977-1980.....	4,126	28.62	189	10.10
Prior to 1977.....	10,882	71.38	1,682	89.10
	chi-square = 292.72 (df = 1, p = .000)			
	Mean		Mean	
Years Employed as RN..	11.30		15.84	
	t = -19.42 (df = 15,806, p = .0001)			
Annual Earnings.....	15,074		12,126	
	t = 18.31 (df = 16,489, p = .0001)			
Full-time RNs.....	17,571		15,491	
	t = 13.07 (df = 11,236, p = .0001)			
Part-time RNs.....	9,496		8,163	
	t = 6.34 (df = 5,251, p = .0001)			

of the long-term care facility RNs, were not employed in nursing a year prior to the time of the 1980 survey. With regard to continuing education, 85.95% of the hospital RNs and 75.96% of the long-term care facility RNs had participated in some type of continuing education program during the past year. Of the nurses who did not participate in continuing education, 16.22% of the hospital RNs, as opposed to 30.24% of the long-term care facility RNs, felt that their job did not require continuing education.

With respect to type of employment position, 74.85% of hospital RNs and 55.53% of long-term care facility RNs held a staff or general duty position; 18.50% of hospital RNs and 40.47% long-term care facility RNs held a position as administrator or assistant administrator, supervisor, or head or assistant head nurse. The annual earnings from current principal nursing position for RNs in the survey who worked in hospitals was higher than the earnings received by RNs who worked in long-term care facilities. For full-time and part-time employment combined, the average annual earnings for hospital RNs was $15,069, whereas for long-term care facility RNs it was $12,107. Full-time hospital RNs had an average annual income of $17,571 as opposed to $15,491 for long-term care facility RNs. The average annual earnings for part-time hospital RNs was $9,496, and for part-time long-term care facility RNs it was $8,163.

Table 16: Type of Position by Education: Hospital Registered Nurses

Type of Position	Education					
Frequency Column %	Diploma in Nursing	Associate Degree	Baccalaureate Degree	Master's Degree	Doctorate	
Administrator	198 2.66	37 1.00	124 3.35	97 23.49	2 40.00	
Supervisor	570 7.79	163 4.39	166 4.48	21 5.08	0 0.00	
Head Nurse	736 9.90	251 6.76	324 8.74	27 6.54	0 0.00	
Staff or Gen. Duty	5,262 70.78	3,034 81.73	2,638 71.20	78 18.89	0 0.00	
Other	659 8.87	227 6.12	453 12.23	190 46.00	3 60.00	
TOTAL	7,434 100.00	3,712 100.00	3,705 100.00	413 100.00	5 100.00	15,269

Frequency missing = 98

In terms of the type of position that RNs hold, it is interesting to compare position of hospital and long-term care RNs in terms of level of education. Tables 16 and 17 provide data for such a comparison. In examining the two tables, it can be seen that there is a much higher percentage of long-term care facility nurses having just a diploma or associate degree level of education who hold an

Table 17: Type of Position by Education: Long-Term Care Facility Registered Nurses

Type of Position	Education					
Frequency Column %	Diploma in Nursing	Associate Degree	Baccalaureate Degree	Master's Degree	Doctorate	
Administrator	267 20.29	64 20.19	52 23.42	9 42.86	0 0.00	
Supervisor	159 12.08	37 11.67	35 15.77	4 19.05	0 0.00	
Head Nurse	82 6.23	15 4.73	12 5.40	0 0.00	0 0.00	
Staff or Gen. Duty	724 55.02	179 56.47	101 45.50	5 23.81	0 0.00	
Other	84 6.38	22 6.94	22 9.91	3 14.28	0 0.00	
TOTAL	1,316 100.00	317 100.00	222 100.00	21 100.00	0 100.00	1,876

Frequency missing = 14

administrative or supervisory position. This may indicate that even though the status of long-term care facility employment might not be high, and earnings and benefits might not be very competitive, RNs can still be recruited and retained by offering nurses with less education a title or position of status. An additional factor to consider, however, is that more supervisory and administrative positions for RNs likely exist in long-term care facilities

because of the limited presence of physicians, which places more responsibility for planning and implementing care, as well as directing other health care personnel, on registered nurses. The same continuing education-position pattern does appear to also hold for RNs with baccalaureate and doctoral degrees, although the limited number of long-term care facility RNs makes comparison at this level of education somewhat questionable.

Logistic Analysis

Employment Setting

The first logistic regression equation of this study focuses on predicting long-term care facility employment as opposed to hospital employment, using individual demographic characteristics as well as employment characteristics of RNs. Comparative analysis of the marginal characteristics of hospital and long-term care facility RNs involved the Statistical Analysis System multiple logistic regression procedure (Harrell, 1986), which was discussed in detail in the "Methods" chapter of this study. Out of 17,257 nurses, the logistic analysis included 12,433 hospital RNs and 1,533 long-term care facility RNs. There were two reasons why 3,291 RNs were omitted from analysis. First, with regard to the employed in 1979 and percent of time employed variables, nurses who had received their first RN license in 1980 or who had been employed in nursing for less than one year were

omitted. Second, a number of RNs were omitted because of missing values resulting from survey question nonresponses.

There were nine independent variables in the initial logistic regression main effects model. The likelihood ratio chi-square statistic for testing the joint significance of all variables in the model was 998.28 (df = 9, $p < .001$). The R value, the statistic based on the likelihood ratio chi-square and which measures the predictive ability of the model, was .318. The R statistic is similar to the multiple correlation coefficient, after a correction is made for the number of parameters being estimated. It is a value such that R squared represents the proportion of log likelihood explained by the model. For this model R squared was .10. Summary statistics for the individual independent variables are given in Table 18.

In Table 18, beta is the estimated regression coefficient (maximum likelihood estimate) for each variable. Standard error is the estimated standard error of the regression coefficient estimate. Chi-square is the maximum likelihood estimate chi-square (Wald) statistic or square of the ratio of the regression coefficient to the standard error estimate. P is the probability value based on this chi-square with one degree of freedom. R represents the partial R statistic for each variable. These R values range between -1 and +1, and provide a measure of the contribution of each variable, independent of sample size, while

accounting for the presence of the other variables in the model. In interpreting the Tables 18 and 19, it is helpful to keep in mind that the marginal characteristics of the independent variables were dummy coded "1," so that positive regression coefficient values represent the degree to which these characteristics predict long-term care facility employment.

Table 18: Independent Variable Statistics for Long-Term Care Setting Main Effects Logistic Regression Model

Variable	Beta	Std. Error	Chi-Square	P	R
Intercept	-3.956	.143	764.61	.000	
Age 45 & Older	0.967	.063	238.57	.000	.156
< 80% Time Nurse	0.850	.063	179.56	.000	.136
No Contin. Educ.	0.603	.070	74.49	.000	.087
Educa. < Baccal.	0.562	.082	47.36	.000	.069
No Current Educ.	0.463	.116	15.79	.000	.038
Part-Time	0.273	.062	19.15	.000	.042
Children at Home	0.226	.065	15.44	.000	.037
Not Employed '79	0.151	.108	1.95	.162	.000
Unmarried	0.021	.072	0.09	.766	.000

As can be seen from examining the fourth column of Table 18, seven of the nine independent variables were statistically significant. Age, percent of time employed in nursing, and the three education variables contribute the most in terms of predicting employment setting. The employed in 1979 variable was not significant, but there is some question regarding its intrinsic quality. The survey

question for this variable asked whether or not the RN was employed in nursing on November 15, 1979. This quite restricted point indicator may seem less desirable when compared to the percent of time employed variable based on a longer time duration, but it was felt that it warranted investigation nonetheless.

Table 19: Independent Variable Statistics for Long-Term Care Setting Interaction Logistic Regression Model

Variable	Beta	Std. Error	Chi-Square	P	R
Intercept	-4.630	.253	333.68	.000	
Age 45 & Older	1.711	.197	75.46	.000	.087
< 80% Time Nurse	1.065	.088	146.15	.000	.122
No Contin. Educ.	0.600	.070	72.94	.000	.086
Educa. < Baccal.	0.707	.105	45.60	.000	.067
No Current Educ.	0.804	.228	12.41	.000	.033
Part-Time	0.412	.142	8.39	.004	.026
Children at Home	1.221	.273	20.05	.000	.043
Not Employed '79	0.109	.109	0.99	.320	.000
Unmarried	-0.118	.137	0.74	.389	-.000
Age*Children	-0.593	.139	18.21	.000	-.041
Age*Educa	-0.552	.170	10.56	.001	-.030
Part-Time*Child.	-0.528	.138	14.55	.000	-.036
Cur. Ed.*Child.	-0.523	.266	3.86	.049	-.014
Part-Time*Age	0.426	.131	10.61	.001	.011
% Time*Age	-0.441	.124	12.74	.000	-.033
Marital*Age	0.267	.148	3.26	.071	.011
Marital*Child.	0.078	.147	0.28	.598	.000

As hypothesized, marital status by itself was shown to have no bearing on the work setting situation of RNs, so that marital status might only be relevant when interacting

with other variables, particularly children living at home and age. The children living at home variable by itself was significant. One explanation why RNs who have children living at home are more likely to work in long-term care facilities than in hospitals might be that long-term care facilities, in an effort to recruit and retain nurses, are more flexible in their employment policies regarding nurses with children. For example, time off to care for sick children might be a part of such policies. A more complete understanding of the pattern of the independent variables can be obtained from examining interaction effects. In Table 19, significant interactions have been added to the main effects model.

With inclusion of the interaction effects, the R or predictive ability value of the model increased from .318 to .332, based on the interaction model chi-square value of 1,099.06 (df = 17, p < .001). Statistical comparison was undertaken to assess whether the interaction model yielded a better fit than the main effects model. The -2 log likelihood decreased from 8,666.95 for the main effects model with nine degrees of freedom to 8,566.17 for the interaction model with 17 degrees of freedom, a difference of 100.78. For the significance test, the -2 log likelihood difference is distributed as chi-square with 17 - 9 = 8 degrees of freedom. The critical chi-square value at the .001 level of significance for eight degrees of freedom is

26.13. Hence, the interaction model gives a significantly better fit than the main effects model.

The equation for the logistic regression model is log $[\pi/(1-\pi)] = \alpha + \Sigma\ \beta X$. Fitting the above interaction logistic regression model using the SAS Logist procedure, which gives a maximum likelihood fit, yields the prediction equation log $[p/(1-p)] = -4.630 + \Sigma\ bX$. Alternatively, this equation can be expressed directly in terms p by the form $p = 1/[1 + \exp -(-4.630 + \Sigma\ bX)]$. Thus, whereas the logistic model is additive with regard to the logits, it is nonlinear with respect to the probabilities. That is, while the coefficients in the logit equation represent the magnitude of the increment to the log-odds of Y = 1, in terms of probabilities the logistic regression coefficients estimate how changes in the independent variables multiply the odds, $p/(1-p)$, of falling into category 1, in this case long-term care facility employment, rather than category 0 (hospital employment), holding the other independent variables constant.

Predicted logit, probability, odds, and effect of logistic regression coefficients on the odds values are summarized in Table 20. In Table 20, "logit" is the logistic transformation, or the function log $[p/(1-p)]$ in the logistic multiple regression prediction equation log $[p/(1-p)] = a + \Sigma\ bX$. More directly, it is the log of the odds of being employed in a long-term care facility as

opposed to a hospital. The first logit column of the table gives values for each individual variable. The second column gives cumulative logit values as the presence of each variable in the prediction equation is accounted for. The value p in the third column of Table 20 represents the predicted probability or proportion of RNs employed in long term care facilities associated with each individual independent variable. Column four gives cumulative predicted probabilities or proportions as each of the variables are successively included in the equation.

Table 20: Logistic Transformation Values for Long-Term Care Setting Interaction Multiple Regression Model

Variable	Logit (Log Odds)	Cumul. Logit	p	Cumul. p	Odds p/(1-p)	Multiple Effect of b on Odds
Intercept	-4.630	-4.630	.010	.010	.010	
Age 45 & Older	-2.919	-2.919	.051	.051	.054	5.53
< 80% Time Nurse	-3.565	-1.854	.028	.135	.028	2.90
No Contin. Ed.	-4.030	-1.254	.017	.222	.018	1.82
Educ. < Baccal.	-3.923	-0.547	.019	.367	.020	2.03
No Current Ed.	-3.826	0.257	.021	.564	.022	2.23
Part-Time	-4.218	0.669	.015	.661	.015	1.51
Children Home	-3.409	1.890	.032	.869	.033	3.39
Not Employed 79	-4.521	1.999	.011	.881	.011	1.12
Unmarried	-4.748	1.881	.009	.868	.009	0.89
Age*Children	-5.223	1.288	.005	.784	.005	0.55
Age*Education	-5.182	0.736	.006	.676	006	0.58
Part-Time*Child.	-5.158	0.208	.006	.552	.006	0.59
Cur. Ed.*Child.	-5.153	-0.315	.006	.422	.006	0.59
Part-Time*Age	-4.204	0.111	.015	.528	.015	1.53
% Time*Age	-5.071	-0.330	.006	.418	.006	0.64
Marital*Age	-4.363	-0.063	.013	.484	.013	1.31
Marital*Child.	-4.552	0.015	.010	.504	.010	1.08

The ratio p/(1-p) that appears in the logistic transformation log [p/(1-p)] is referred to as the "odds," the likelihood of being employed in a long-term care facility as opposed to a hospital. Odds values are given in column five of Table 20. Column six of the table gives the multiplicative effect of the logistic regression coefficients on the odds.

The prediction equation for the multiple logistic regression interaction model is log [p/(1-p)] = -4.630 + Σ bX. When what are considered to be the nonmarginal categories of all nine independent variables are in effect, the prediction equation takes on the value of the intercept term, -4.630. The interpretation of this is that if an RN possesses no marginal characteristics, the predicted probability of being employed in a long-term care facility is .010. This corresponds to a predicted probability of .504 for an RN who has all nine marginal characteristics, with interaction effects included. These two situations, of course, are hypothetical extremes, and the typical RN would fall somewhere in between.

When considering logistic regression equations containing different independent variable combinations, the probability of the "1" category of the dependent variable, in this case long-term care facility employment, can be obtained directly as p = 1/[1 + exp -(a + Σ bX)]. The "exp" in this formula represents the exponential or antilog

of the -(a + Σ bX) term which follows it. Different "b," or logistic regression coefficient, values can be applied in the probability-solving formula to yield different p values.

Consider, for example, the case where an RN is 45 years or older and has less than a baccalaureate degree level of education. Children living at home for such a nurse would generally not be an issue, since they would likely be older and therefore not be as much a responsibility as younger children. However, age and education by themselves might be expected to be individual characteristics given consideration by employers, particularly for a nurse seeking reemployment after a period of not being employed. So, if percent of time employed in nursing since graduation from basic nursing education were added to age and education, the resulting prediction equation would be log [p/(1-p)] = intercept + age + education + % time + age*education + % time*age = -4.630 + 1.711 + .707 + 1.065 -.552 - .441 = -2.140. Solving for p would yield p = 1/[1 + exp -(2.140)] = 105. This predicted probability or proportion value for long-term care facility employment corresponds to a .895 value for hospital employment. These predicted proportions are not very different from the actual proportions of .11 long-term care facility RNs and .89 hospital RNs in the sample.

A comparison with an RN with the above characteristics might be an older RN working part-time. In this case, the

prediction equation is log [p/(1-p)] = intercept + age + part-time + age*part-time = -4.630 + 1.711 +.412 + .426 = -2.081. The resulting probability of long-term care facility employment in this situation is .111, which is slightly greater than the probability obtained for the nurse profiled above.

If one were to focus on the three education independent variables as predictors of long-term care facility employment, the prediction equation would be log [p/(1-p)] = intercept + education + current academic degree pursuit + continuing education = -4.630 + .707 + .804 + .600 = -2.519. This logit value corresponds to a predicted proportion of .075 long-term care facility RNs in the specific case where an RN has less than a baccalaureate degree level of education, is not pursuing an academic degree, and has not participated in continuing education. This indicates that educational factors alone are fairly good predictors of long-term care facility employment when RNs have this particular combination of characteristics. With regard to using continuing education as a predictor, although the data for this study is from 1980, a recent trend toward mandatory continuing education for RNs has resulted in 13 states currently having a continuing education requirement (Newbern, 1989).

From the third column of Table 20, it can be seen that singly the education variables are not strong predictors as

compared, for instance, to age. However, the probability of long-term care facility employment for an RN who is both 45 years of age or older and is not pursuing an academic degree is .108. The older age category combined with not participating in continuing education yields a long-term care facility probability of .090. The 45 years and older age category combined with having less than a baccalaureate degree level of education yields only a probability of .059, which is not much greater than the .051 probability for age by itself, because of the age*education interaction effect. If an RN happened to be marginal on all three education variables, and also was 45 years or older, the prediction equation would be [p/(1-p)] = intercept + age + education + academic degree pursuit + continuing education + age*education = -4.630 + 1.711 + .707 + .804 + .600 - .552 = -1.360. This logit value corresponds to a predicted proportion of .204 long-term care facility RNs for nurses with this combined set of characteristics. This proportion is almost double the overall .11 proportion in the sample data. So, given this particular set of characteristics, 20 out of 100 RNs would be employed in long-term care facilities.

In the interaction model, the main effects have similar significance as in the main effects model. That is, in both models employed in 1979 and marital status are nonsignificant, whereas the other seven main effects are

significant. The interactions of age with marital status and children at home with marital status were not significant as they were expected to be. However, all of the significant interactions do involve the two variables, age and children living at home. As singular effects, age and children have high effect levels. But in the presence of other variables, in five out of six instances resulting joint effects for these two variables are less than the additive sum of the singular effects; only in the case of the full-time/part-time employment*age interaction does the interaction increase the age main effect.

Another factor to note is that all three education-related variables have similar moderately high effects. This finding indicates that RNs who have a baccalaureate degree or higher level of education, who actively participate in continuing education programs, and who pursue a higher academic degree during their employment tend to be RNs who work in hospitals rather than in long-term care facilities. There were two statistically significant interactions involving education variables, these being education*age and current educational pursuit*children living at home. With regard to the education*age interaction, the combined characteristics of being 45 years or older and having less than a baccalaureate degree level of education do not very much increase the probability (.059) of long-term care facility employment beyond the

probability (.051) produced by the age variable alone. Consequently, this particular interaction effect indicates that it may be viable to use these two variables singly as predictors as an alternative to using both jointly.

The current educational pursuit*children living at home interaction continues the general trend in the work setting equation for the statistically significant interactions to be negative in sign. Consequently the interaction, with the exception of part-time employment*age, tend to have a diminishing effect on the probability of long-term care facility employment as compared to one over and beyond the straight additive effect of two singular variables such as a positive sign interaction would produce. The restrictive effect of the current educational pursuit*children living at home interaction may be due to hospital RNs, who as a group are younger than long-term care facility RNs, having younger children who represent more of a family responsibility and might therefore be more of a hindrance to academic degree pursuit during the time outside of scheduled employment hours.

Career Line

The preceding multiple logistic regression model utilized a combination of demographic and employment characteristics of RNs to predict long-term care facility as opposed to hospital employment. It was theorized that nurses who possessed "marginal" characteristics would have

an increased likelihood of being employed in long-term care facilities. "Marginality" was defined as having characteristics related to having limited job qualifications (e.g., education), limited career orientation or commitment (e.g., partial employment, employment discontinuity, family responsibilities), or personal characteristics less preferred by employers (e.g., older employees).

The above approach used employment setting, hospital versus long-term care facility, as a dependent variable. A somewhat different and perhaps more focused way of dealing with marginality as it relates to the employment of RNs is to specify the model or expected career status of the professional RN, and then from the data define and create a variable that will serve as an empirical indicator of career marginality/nonmarginality. For the purposes of this study this variable, to be treated as a dependent variable, will be referred to as "career line." The career line variable can be obtained from a combination of selected employment characteristics of RNs in the study survey, specifically full-time/part-time employment status, percent of time employed as a nurse since graduation from basic nursing education, and participation/nonparticipation in continuing education. Thus, a positive or nonmarginal career line would be a nurse who is employed full-time, who has been employed in nursing 80% or more of the time since graduation from basic nursing education, and who keeps abreast of the

field of nursing by participating in continuing education. An RN with a marginal career line would be a nurse falling into the opposing marginal categories on all three of the employment characteristic variables comprising the career line variable.

A reason for treating career line as a dependent variable in evaluating the marginal or nonmarginal status of career orientation among RNs, is that it allows the variable, employment setting, to be examined as an independent variable in addition to being investigated as a dependent variable. In this way, career line could be predicted from employment setting, a set of individual demographic characteristics, plus the interactions of these two categories of independent variables. The individual characteristics used as predictors in this scenario will be education, age, and children living at home, with employment setting once again being hospital versus long-term care facility.

Because of the way in which the career line variable was operationalized, the number of RNs analyzed for this equation was limited. That is, only those RNs who did, as well as did not, simultaneously meet the career line definition of working full-time, having been employed in nursing 80% or more of the time since graduation from basic nursing, and had participated in continuing education, were included in the analysis. Out of 7,547 RNs who were

analyzed, 7,184 had a nonmarginal career line and 363 had a marginal career line.

Table 21: Career Line by Education

Education	Career Line		Total
Frequency Row Percent	Marginal	Nonmarginal	
Diploma in Nursing	269 7.43	3,353 92.57	3,622
Higher than Diploma in Nursing	101 2.37	4,163 97.63	4,264
			7,886

chi-square = 112.05 (*df* = 1, *p* < .001)
frequency missing = 9,371

Due to the limited number of RNs in the marginal career line category, the education variable was recoded to diploma in nursing versus all higher levels in an effort to maximize cell frequency size. Previous coding dichotomized education according to diploma or associate degree in nursing versus baccalaureate degree or higher. The concern was for the number of long-term care facility RNs, who comprised only 11% of the overall sample; whereas 30% of these RNs held an associate or higher degree, only 13% held a baccalaureate or higher degree. By recoding education, the lowest career line*education cell frequency was 101, as shown in Table 21,

which is about as low as it should go to allow sufficient cell frequencies for the interaction model.

Once again, logistic regression is the method of statistical analysis, since career line will be considered to be either marginal or nonmarginal. Table 22 shows the results of the main effects model logistic analysis. The 0, 1 coding scheme for the career line model is such that a positive or nonmarginal career line is coded "1." As for the independent variables, the categories of being younger, having a higher level of education, not having children living at home, and being employed in a hospital are coded "1," meaning that positive regression coefficient values (beta in Table 22) indicate that RNs having the "1" category characteristics have an increased likelihood of having a positive career line.

As can be seen from Table 22, work setting, education, age, and children are statistically significant as predictors of career line. The only irregularity that catches the eye is the elevated probability value for the intercept term. However, looking to Table 23, which summarizes findings for the interaction logistic model, it can be seen that the probability value for the interaction term has decreased significantly.

Table 22: Independent Variable Statistics for Nonmarginal Career Line Main Effects Logistic Regression Model

Variable	Beta	Standard Error	Chi-Square	P	R
Intercept	0.215	.130	2.74	.098	
Hospital Setting	1.636	.128	164.16	.000	.236
No Children Home	1.587	.137	133.29	.000	.212
Educa. > Diploma	0.833	.126	43.60	.000	.120
Age < 45 Years	0.694	.126	33.13	.000	.103

The predictive R value for the main effects model was .404, based on a model chi-square value of 483.35 (*df* = 4, *p* < .001). R-square, or the proportion of log likelihood explained by the model, is .162. The interaction career line model, in comparison, yields an R value of .422, based on a model chi-square of 537.44 (*df* = 10, *p* < .001). The R-square value of the interaction model is .178. Comparing models statistically to see which gives a better fit, the interaction model yields a 2,427.96 - 2,373.86 = 54.10 reduction in -2 log likelihood. In comparing models, this difference is treated as a chi-square value, with degrees of freedom being 10 - 4 = 6. At the .001 level of significance, the critical value for six degrees of freedom is 22.57. Hence, the interaction model gives a better fit than the main effects model.

Table 23: Independent Variable Statistics for Nonmarginal Career Line Interaction Logistic Regression Model

Variable	Beta	Standard Error	Chi-Square	P	R
Intercept	0.433	.203	4.52	.034	
Hospital Setting	1.574	.242	42.28	.000	.118
No Children Home	0.665	.283	5.53	.019	.035
Educa. > Diploma	1.751	.390	20.14	.000	.079
Age < 45 Years	0.494	.262	3.54	.060	.023
Age*Children	2.216	.401	30.51	.000	.099
Age*Education	-0.943	.357	6.96	.008	-.041
Educa.*Children	-0.626	.400	2.45	.117	-.012
Work Set.*Child.	0.259	.345	0.56	.452	.000
Work Set.*Educa.	-0.197	.310	0.40	.526	.000
Work Set.*Age	-0.053	.301	0.03	.860	.000

From Table 24, it can be seen that the single variable that most strongly predicts career line is education, followed closely by employment setting. Thus, RNs who have a higher level of education than a diploma in nursing are 8.88 times as likely to have a nonmarginal career line as those RNs who have just a diploma in nursing as their highest education. Registered nurses who work in hospitals are 7.44 times as likely to have a nonmarginal career line as RNs who work in long-term care facilities. With regard to the children variable, RNs who have no children living at home are three times as likely as nurses who do have children living at home to have a nonmarginal career line. The logistic regression coefficient for the age variable has an attained probability value of .06, which is a noticeably

higher probability value than that of the other main effect regression coefficients. Nonetheless, the probability of a nonmarginal career line for RNs under 45 years of age is .716. In terms of the odds ratio, [p/(1-p)], this probability value is equivalent to the likelihood of a nonmarginal career line for younger nurses being 2.52 times that for nurses 45 years or older.

Table 24: Logistic Transformation Values for Nonmarginal Career Line Interaction Multiple Regression Model

Variable	Logit (Log Odds)	Cumul. Logit	p	Cumul. p	Odds p/(1-p)	Multiple Effect of b on Odds
Intercept	0.433	0.433	.607	.607	1.542	
Hospital Setting	2.007	2.007	.882	.882	7.441	4.83
No Children Home	1.098	2.672	.750	.935	2.998	1.94
Educa. > Diploma	2.184	4.423	.900	.988	8.882	5.76
Age < 45 Years	0.927	4.917	.716	.993	2.521	1.64
Age*Children	2.649	7.133	.934	.999	14.140	9.17
Age*Education	-0.510	6.190	.375	.998	0.600	0.39
Educa.*Children	-0.193	5.564	.452	.996	0.824	0.53
Work Set.*Chld.	0.692	5.823	.666	.997	1.998	1.30
Work Set.*Educ.	0.236	5.626	.559	.996	1.266	0.82
Work Set.*Age	0.380	5.573	.594	.996	1.462	0.95

The two statistically significant interactions in the career line model were age*children living at home and age* education. Referring to Table 24, for RNs having no children living at home, the predicted probability of having a nonmarginal career line is .75. Interacting with age, however, this probability increases to .99. So, for nurses

under 45 years of age who also have no children living at home, there is only a .01 probability that these RNs will have a marginal career line. When age interacts with education, the effect of these two variables being present together is less than the presence of education alone. That is, if an RN has a higher level of education than a diploma in nursing, and is also under 45 years of age, the probability of having a positive career line is .79 as compared to a probability of .90 for education alone.

Employment Versus Unemployment

Germani defined marginality as "the lack of participation of individuals or groups in those spheres in which, according to determined criteria, they might be expected to participate" (1980, p. 49), with lack of participation being either partial or total. The two previous equations included variables having categories (e.g., part-time employment, limited percentage of time employed since obtaining RN license, not participating in continuing education) which might be considered partial career participation characteristics. The ideal career model for an RN would be more complete participation in the RN role, as would be the general expectation for a professional nurse who has prepared for health care service.

The next equation to be examined compares RNs currently employed with RNs who are not employed. In Germani's perspective on marginality, this situation would be

construed as total lack of participation in the employment sphere for persons possessing licensed credentials and in demand as professional health care providers in the health care field. For whatever reason the unemployment exists, and motivational data were not available, the interest is in comparing employed and unemployed RNs in terms of differences in individual characteristics. Consequently, with employment versus unemployment being the dependent variable, the logist regression model has as independent variables education, age, marital status, and children living at home. Since interest is particularly on nurses who are RNs but who are nonetheless unemployed, coding is "1" for being unemployed and "0" for being employed. For the independent variables, less than a baccalaureate degree level of education, being 45 years of age or older, being widowed, divorced, separated, or never married, and having children living at home are coded "1." The opposing categories of these four independent variables are coded "0."

Tables 25 and 26 show the regression coefficient, standard error, chi-square, probability, and partial contribution to the model effects of the independent variables. The analysis is based on a total of 28,765 RNs, 22,402 of whom were employed and 6,363 who were unemployed. Due to missing values in the data records, 1,610 RNs were omitted from the analysis. For the main effects multiple

logistic regression model, the predictive ability R value is .220, based on a model chi-square of 1,478.76 (df = 4, p < .001) degrees of freedom. Based on a model chi-square of 2,288.59 (df = 10, p < .001), the R value for the interaction model is .273 with R-square being .075, meaning that about eight percent of the log likelihood is explained by this model as opposed to about five percent for the main effects model. In comparing the two models in terms of which gives the better fit, there is a reduction in -2 log likelihood of 28,921.88 - 28,112.02 = 809.86. This value is distributed as chi-square with 10 - 4 = 6 degrees of freedom. At the .001 level of significance, the critical chi-square value for six degrees of freedom is 22.57. Since the log likelihood difference of 809.06 is much greater than this, the interaction model gives a better fit than the main effects model.

Table 25: Independent Variable Statistics for Unemployment Main Effects Logistic Regression Model

Variable	Beta	Std. Error	Chi-Square	P	R
Intercept	-1.524	.039	1,533.74	.000	
Age 45 & Older	0.966	.031	980.34	.000	.179
Unmarried	-0.735	.039	351.54	.000	-.107
Children Present	0.095	.032	8.72	.003	.015
Educa. < Baccal.	0.005	.034	0.02	.889	.000

In examining Table 26, it can be seen that education as a main effect is not significant. Being in the older age category has the greatest effect in predicting unemployment, followed by having children living at home. Due to the way in which the variables were coded, the minus value of the marital status regression coefficient indicates that married RNs are more likely than unmarried RNs to be unemployed, and this is not surprising, since these nurses would likely have working husbands and may also be in a period of their lives when they are concerned with raising a family. Indeed, as was noted, having children living at home has a relatively high effect in predicting unemployment.

Some patterns are evident among the interaction terms. First of all, the high negative age*children effect is worth noting. Singly, older RNs and RNs who have children living

Table 26: Independent Variable Statistics for Unemployment Interaction Logistic Regression Model

Variable	Beta	Std. Error	Chi-Square	P	R
Intercept	-2.237	.076	867.43	.000	
Age 45 & Older	1.643	.087	357.48	.000	.108
Unmarried	-0.413	.099	17.56	.000	-.023
Children Present	1.203	.080	224.85	.000	.086
Educa. < Baccal.	-0.060	.085	0.49	.484	.000
Age*Children	-1.672	.077	467.64	.000	-.124
Marital*Child.	-0.597	.096	38.96	.000	-.035
Age*Education	0.360	.079	20.82	.000	.025
Marital*Age	0.271	.093	8.59	.003	.015
Educa.*Marital	-0.220	.098	5.08	.024	-.010
Educa.*Child.	-0.151	.086	3.06	.080	-.006

at home have an increased likelihood of being unemployed. However if an RN is both older and has children living at home, the odds of being unemployed (.345) as opposed to employed is less than the single effect odds of age (.552) and children living at home (.356). One plausible explanation for this is that older RNs have older children, who would constitute less responsibility and hence be less of a restriction to employment. Table 14 (p. 90) shows that a significantly greater proportion of long-term care facility RNs, as compared to hospital RNs, do have older children living at home.

The negative value of the marital status*children interaction term indicates that if an RN is divorced, widowed, separated, or has never been married, and has children living at home, there is an increased likelihood of being employed. Employment in this situation might result from a degree of financial necessity.

As noted earlier, education as a main effect was not statistically significant. However, there was a statistically significant positive interaction involving education and age. From the third column of Table 27, it can be seen that the predicted proportion of RNs 45 years and older who are unemployed is .356. The prediction equation for an RN who is both 45 years or older and has less than a baccalaureate degree level of education is log [p/(1-p)] = intercept + age + education + age*education =

Table 27: Logistic Transformation Values for Unemployment Interaction Regression Model

Variable	Logit (Log Odds)	Cumul. Logit	p	Cumul. p	Odds p/(1-p)	Multiple Effect of b on Odds
Intercept	-2.237	-2.237	.096	.096	.107	
Age 45 & Older	-0.594	-0.594	.356	.356	.552	5.17
Unmarried	-2.650	-1.007	.066	.268	.071	0.66
Children Present	-1.034	0.196	.262	.549	.356	3.33
Education	-2.297	0.136	.091	.534	.101	0.94
Age*Children	-3.909	-1.536	.021	.177	.020	0.19
Marital*Child.	-2.834	-2.136	.056	.106	.059	0.55
Age*Education	-1.877	-1.776	.133	.145	.153	1.43
Marital*Age	-1.966	-1.505	.123	.182	.140	1.31
Educa.*Marital	-2.457	-1.725	.079	.151	.086	0.80
Educa.*Child.	-2.388	-1.876	.084	.133	.092	0.86

$-2.237 + 1.643 - .060 + .360 = -.294$. Solving directly for p with the formular $p = 1[1 + \exp -(a + \Sigma bX)]$, where -.294 is substituted as the $a + \Sigma bX$ term, yields a predicted unemployment proportion of .427. This proportion is almost double the .221 proportion of unemployed RNs in the sample, but the predictive effect in this specific situation still must be attributed largely to the contribution of the age effect.

The marital status*age and education*marital status interactions are of somewhat less impact in their effects than the other significant interactions, and have low partial contribution R values. The education*children interaction is a statistically nonsignificant interaction.

Job Change

Job change could possibly be an indicator of career discontinuity, yet this is not necessarily so. For instance, although job change might be indicative of an unstable or unestablished career situation, at the same time it could be a positive career move indicating promotion or improvement in the career situation. Also, the change might essentially be a continuation of the same work situation except for the fact, for example, that the employing establishment itself simply moved to another location and employees accompanied the move. This latter situation, in fact, would be quite plausible, because with regard to job change the survey query went no farther than to simply inquire whether or not the location of the RN's employment at the time of the survey was the same as it was one year earlier. Thus, since more specific and clearly focused information is not available, a degree of caution is in order when to interpreting the significance of this job change variable.

The purpose of this final analysis was to investigate job change as a dependent variable by comparing RNs who had experienced a change in the location of their employment during the past year with those RNs who had not experienced such a job change. In examining job change, the first point of interest was to see if there were differences with regard to employment setting, hospital versus long-term care

facility. Table 28 shows a cross-tabulation of job change by employment setting. This table shows that the pattern of job location change for hospital and long-term care facility RNs was virtually the same. Statistical comparison yields a chi-square value of .034 (df = 1), with a probability value of .854.

Table 28: Job Location Change by Employment Setting

Employment Setting	Job Location Change During Past Year		Total
Frequency Row Percent	Yes	No	
Hospital RNs	1,433 10.63	12,043 89.37	13,476
Long-Term Care Facility RNs	181 10.78	1,498 89.22	1,679
			15,155

chi-square = .034 (df = 1, p = .854)
frequency Missing = 10

It was next decided to examine a multiple logistic regression model with job location change as the dependent variable and education, age, full-time/part-time employment status, and work setting as the independent variables. Change in job location during the past year was coded "1," as opposed to "0" for no change. As for the independent variables, having less than a baccalaureate degree level of

education, being 45 years of age or older, being employed part-time, and being employed in a long-term care facility were coded "1," with opposing second categories being coded "0." The logistic analysis included 14,749 RNs, 13,198 of whom had experienced no job location change within the past year and 1,551 who did have a job location change. Due to missing values in the data, 416 RNs were excluded from analysis.

Main effects and interaction models were fitted using the multiple logistic regression procedure. As can be seen from Table 29, none of the interaction terms were statistically significant, and hence the main effects model was the appropriate model to use for analytic purposes. The R value, or overall predictive indicator for the model, is .177 based on a chi-square value of 319.20 (df = 4, p < .001). This value is lower than that of the preceding logistic models. However, in looking at Table 30 pertaining to the main effects model, it is evident that one variable, age, stands out more predominately among the other independent variables in contributing to the predictive ability of the model.

The negative value of the age variable logistic regression coefficient indicates that younger RNs were more likely than older RNs to have had a job location change within the past year. From examining the intercept

Table 29: Independent Variable Statistics for Job Change Interaction Logistic Regression Model

Variable	Beta	Standard Error	Chi-Square	P	R
Intercept	-1.671	.058	842.26	.000	
Age 45 & Older	-1.406	.220	40.68	.000	-.062
Long-Term Care	0.462	.223	4.29	.038	.015
Educa. < Baccalaur.	-0.300	.072	17.35	.000	-.039
Part-Time	-0.344	.118	8.54	.004	-.026
Part-Time*Work Set.	-0.280	.189	2.19	.139	-.004
Part-Time*Age	0.180	.194	0.87	.352	.000
Part-Time*Education	0.169	.138	1.49	.222	.000
Education*Age	0.111	.236	0.22	.638	.000
Work Setting*Age	0.077	.205	0.14	.708	.000
Work Setting*Educa.	0.013	.237	0.00	.958	.000

Table 30: Independent Variable Statistics for Job Change Main Effects Logistic Regression Model

Variable	Beta	Std. Error	Chi-Square	P	R
Intercept	-1.704	.051	1,110.64	.000	
Age 45 & Older	-1.247	.087	206.52	.000	-.144
Long-Term Care	0.399	.089	20.12	.000	.043
Educa. < Baccal.	-0.249	.059	17.64	.000	-.040
Part-Time	-0.235	.060	15.18	.000	-.036

probability value in the third column of Table 31, it can be seen that when only the nonmarginal categories of the independent variables were used to predict job change, the predicted proportion of RNs having experienced job change

was .154. This proportion is higher than the .105 proportion of RNs in the sample who had experienced job change. With regard to age as a predictor, being 45 years or older decreases the predicted proportion of nurses having a job location change to .050. One possible explanation for this age effect finding might be that these job location changes represented career advancement opportunities for younger nurses. This line of reasoning receives some support from the similar effect of education in the model, although the strength of the education effect is much less than that of age.

With respect to education, its negative logistic regression coefficient in the first column of Table 29 indicates that RNs with a higher level of education are more likely than RNs having less than a baccalaureate degree to have had a job location change within the past year. In the probability or proportion column of Table 31, the predicted proportion value for education shows that having less than a baccalaureate degree level of education decreases the intercept proportion value from .154 to .124. And, from looking at the last column of Table 31, it can be seen that the lower level of education category has a diminishing .078 effect on the likelihood of an RN having had a job location change during the past year as opposed to not having experienced such a change.

Table 31: Logistic Transformation Values for Job Change Multiple Regression Model

Variable	Logit (Log Odds)	Cumul. Logit	p	Cumul. p	Odds p/(1-p)	Multiple Effect of b on Odds
Intercept	-1.704	-1.704	.154	.154	.182	
Age 45 & Older	-2.951	-2.951	.050	.050	.052	0.29
Long-Term Care	-1.305	-2.552	.213	.072	.271	1.49
Educ. < Baccal.	-1.953	-2.801	.124	.057	.142	0.78
Part-Time	-1.939	-3.036	.126	.046	.144	0.79

Combining the effects of age and education would yield a prediction equation of log [p/(1-p)] = intercept + age + education = -1.704 -1.247 -.249 = -3.200. Solving directly for p with the formular $p = 1/[1 + \exp -(a + \Sigma bX)]$, where -3.200 is substituted as the $a + \Sigma bX$ term, yields a predicted job change proportion of .039 for RNs 45 years or older with less than a baccalaureate degree level of education. Although the addition of the education effect produces only a limited decrease in job change probability below the .050 value produced by the age effect alone, the point to note is the similar general effect of age and education. That is, the similar pattern of more frequent job location change for younger and more highly educated RNs may indicate that the reason RNs with these particular characteristics experience job change is because of career advancement opportunities. This would appear to be a potential area for further research.

Although in the absence of control variables work setting is not related to job change (see Table 28, p. 122), in the logistic main effects model where control variables are present, work setting does have a job change predictive effect. The third column of Table 31 shows that the predicted proportion of long-term care facility RNs experiencing a job change is .213. This is double the proportion of RNs in the sample who had experienced a job location change during the previous year. The work setting variable is the single independent variable where what has been designated the marginal category of the variable increases rather than decreases the probability of job location change. This finding supports the relatively high turnover rate for long-term care facility employment noted earlier in the literature review chapter.

CHAPTER 6
SUMMARY AND DISCUSSION

A central interest of this study has been long-term care facilities, institutions which are currently becoming more and more important in the health care field as an increasing number of people in the United States live well into the later years of life, but at the same time become vulnerable to incapacitating conditions that necessitate institutional care. Also of importance to the study in connection with long-term care for aging individuals have been characteristics of registered nurses, who play a crucial role in the health care process in long-term care facilities. The purpose of this study was to determine empirically whether career marginality was associated with the long-term care facility setting and with the characteristics of RNs who work in this setting. To provide a meaningful basis for evaluation, the hospital setting and characteristics of hospital employed RNs were utilized as a comparative frame of reference.

Due to the negative status and unfavorable perception of long-term care facility employment, for purposes of this study such employment was construed to be "marginal" when contrasted with health care employment in other settings, such as hospitals. Long-term care facility employment was

considered to be a part of the more specific concept, "career marginality," which additionally includes characteristics associated with RNs. With regard to characteristics of RNs, career marginality was assumed to be present when individual or employment characteristics of RNs, or both together, created a situation where an RN might be less qualified or desirable from the perspective of an employer, or from a personal standpoint might be less committed or only partially participatory in career pursuit.

Multiple logistic regression analysis of the data used in this study revealed that RNs with marginal characteristics were more likely to be employed in long-term care facilities than in hospitals. Additionally, a positive career orientation--operationally defined as full-time employment, having been employed in nursing 80% or more of the time since graduation from basic nursing education, and participation in continuing education, was found to be a more likely situation among hospital employed RNs. Also, job turnover was found to be more likely in the long-term care facility setting. With regard to unemployed RNs, which is the ultimate degree of career marginality among nurses, the combination of being an RN 45 years of age or older with less than a baccalaureate degree level of education, and also the family responsibility of having children at home, were found to be factors more likely to result in unemployment.

Implications of Logistic Regression Findings

The findings of this study show a disparity between factors associated with employment of RNs in long-term care facilities and hospitals. Younger, single, more highly educated nurses appear to be gravitating toward hospitals rather than long-term care facilities. Moreover, RNs who work in hospitals are more likely to increase the level of their formal education and to update their nursing knowledge and skills through continuing education. Hospital employed RNs, in addition, evidence more employment continuity in their nursing careers, and are more likely to be committed to their jobs as full-time employees. With regard to full-time versus part-time employment, however, part-time employment in the long-term care facility may be due, among other factors, to a greater need to fill vacant nursing positions in this setting.

Level of education, as one factor, does have relevance for long-term care facility employed RNs. It has been pointed out that because of the acute medical care orientation of the hospital, a higher level of educational preparation is needed in this setting. However, in considering the function of RNs in the long term care facility, the following statement presents a good case for a high level of educational preparation also for nurses employed in this setting:

> They are needed to assess nursing care needs, prescribe nursing care, deliver direct care, evaluate the response to care, make needed modifications, and to direct the assisting staff. Nurses are needed to manage care to assure optimal self-care skills for patients, efficient use of resources, and referral to appropriate resources. (Specht, 1989, p. 5)

An additional factor which makes increased educational preparation important for long-term care facility employed RNs is recent change in Medicare payment policy as it pertains to hospital care. Because hospitals now often discharge older patients before their acute health episodes have completely stabilized, greater nursing skill is required for these individuals upon their transfer to long-term care facilities.

The findings of this study are consistent with recommendations for hospitals to market toward single, young, baccalaureate prepared RNs who might have an interest in continuing their education and seeking job promotion (Whaley et al., 1989). An indication that youth and higher education may be desirable employee characteristics is that nurses who were both older and less educated had an increased likelihood of being unemployed. Employer preference for single nurses may be related to spouse income and the family responsibility of children being a reason for married nurses to cease or interrupt their careers. In the present study, married RNs were more likely than single RNs to be unemployed. Moreover, the presence of children at home was found to be related to employment discontinuity,

part-time work, and nonparticipation in continuing education among RNs.

With regard to the issue of job promotion mentioned by Whaley et al., the present study found that younger, better-educated, full-time RNs were more likely to have had a recent job change. Because these nurse characteristics constitute career positive or nonmarginal characteristics according to the suppositions of this study, it might well be assumed that a substantial amount of such job change was due to career advancement. Although reasons for employment location change were not investigated in the present study, this would be an appropriate area for future research.

As for employment setting, long-term care facility RNs were found to be more likely than hospital RNs to have experienced a job location change. This may be indicative of instability or discontinuity in the nursing career situation, and may be due to characteristics of the work setting, characteristics of the nurses who work in that setting, or a combination of both factors. As previously noted, it has been pointed out that there is a fairly high turnover rate among nurses in long-term care facilities, where staff shortages, stress, and burnout are prominent (Kiyak & Kahana, 1987). The job change finding of this study supports the turnover trend for long-term care facilities reported in the literature. However, since as a group RNs who work in long-term care facilities have been

employed in nursing for a greater length of time than hospital employed RNs (See Table 15, p. 91), it could also be argued that the odds of job change would be greater for these nurses.

General Observations

One factor which has been considered in aging-related attitude research is the association between attitudes and behavior. However, it has proven difficult to demonstrate direct, consistent relationships between attitudes and behavior, and such relationships often tend to be dependent on the methods used to assess these associations. The significance of establishing the existence of a relationship between attitudes and behavior lies in the ability to predict and ultimately influence behavior. With regard to the long-term care facility, this would imply translating positive attitudes toward elderly people into the willingness of RNs to work in that setting.

Considering the tenuousness of predicting behavior from attitudes, it may be more useful to examine other factors that might influence the employment setting choice of RNs. For example, the structural factors of pay, benefits, and career opportunity might be more important in determining what type of employment setting nurses ultimately choose. Data examined in the course of the present study revealed that full-time hospital RNs received annual earnings of more than $2,000 above the annual earnings of full-time long-

term care facility RNs ($17,571 as compared to $15,491). Similarly, the literature indicates that nurses who work in long-term care facilities, as compared with nurses who work in hospitals, receive lower salary, fewer benefits, and also have limited career opportunity (Brower, 1988; Davis et al., 1985; Giordano & Panfil, 1987; Health Resources Administration, 1980; Lappa, 1989; Levine & Moses, 1982; Powills, 1989; Reif, 1982; Robb, 1979; Tolchin, 1989; Vladeck, 1980; "Why Nurses Quit," 1988).

The preceding factors involve individual personal decisions regarding employment setting choice. In addition, however, desirable employee characteristics and qualifications, as maintained in the present study, may also be quite influential in determining the eventual employment setting for nurses. In this situation, the marketable qualities of the nurse and employer decisions play a significant role. Considering this, hospitals may be at a distinct advantage when competing for young, better-educated, career dedicated RNs. In the face of a current national nursing shortage, hospitals may well have a definite recruiting edge in that they are in a stronger position to offer higher pay, better benefits, and greater career opportunity.

General findings of the present study can be compared with data on hospital and long-term care facility RNs reported in the literature. With regard to comparison with

hospital RNs in other studies, the large sample report on 12,234 hospital RNs from 1986 data by Whaley et al. (1989) has relevance. Comparative interpretations in this instance must be made with consideration of the fact that the two sets of data are separated by a six-year time span. However, relevant patterns of similarities and differences may nonetheless be disclosed by the comparison.

Although data on hospital RNs for the two studies were fairly equivalent, notable differences between long-term care facility RNs in the Moses and Spencer (1980) study and hospital RNs in the Whaley et al. study did exist. Whereas the sex composition for the two settings was about equal--98.40% females in long-term care facilities and 97.75% females in hospitals, the ethnic composition was not equivalent. In long-term care facilities 94.73% of the RNs were of white, non-Hispanic ethnic background; the corresponding percent for hospital RNs was 88.86%. This difference, however, may be due to the fact that the sample used by Whaley et al. included only RNs who lived in suburban areas of Chicago. Since a greater percent of minority group members live in metropolitan areas, a valid interpretation of this difference is difficult to establish.

In terms of age, although the under 25 years category was about the same for RNs in the present study and those in the Whaley et al. study, 3.78% for long-term care facility RNs and 4.38% for hospital RNs, the big differences were in

other age categories. Whereas 45.35% of the long-term care facility RNs were in the 25-44 years category, 71.27% of the hospital RNs were in this category. The 45-64 years category included 45.63% of the long-term care facility RNs and 23.57% of the hospital RNs. In the 65 years and older age group were 5.24% of the long-term care facility RNs and .07% of the hospital RNs. The age differences between RNs in the two settings supports the observed trend in the present study of hospital employment of younger nurses.

Marital status has 73.05% of the long-term care facility RNs married, 18.41% widowed, divorced, or separated, and 5.24% never married. For the hospital RNs in the Whaley et al. study, 71.15% were married, 11.62% were widowed, divorced, or separated, and 17.23% were never married. The major difference here is in the never married category, where three times as many RNs in the never married category were employed in hospitals. Greater career opportunity in hospitals as possibly related to a higher level of career orientation among never married RNs may play an important role here.

With regard to the highest educational preparation for long-term care RNs in the present study, 70.14% had a diploma in nursing, 16.92% had an associate degree in nursing, 11.82% had a baccalaureate degree in nursing or a related field, and 1.12% had a master's degree in nursing or a related field. In comparison, as for the basic nursing

education of the hospital nurses in the report by Whaley et al., 45.03% had a diploma in nursing, 28.37% had an associate degree in nursing, 26.43% had a baccalaureate degree in nursing, and 17% had a master's degree in nursing. Moreover, almost 20% of these nurses earned higher degrees after completion of their basic nursing programs, these being primarily baccalaureate and master's degrees in nursing. The percentage of long-term care facility RNs who were currently enrolled in a formal education program leading to an academic degree was 5.69%; the corresponding percent for hospital RNs in Whaley et al.'s report was 17%. From these comparisons it can be seen that the hospital employed RNs tended to be more highly educated than the long-term care facility RNs.

A point to be noted about the above opposing characteristics of long-term care RNs in the present study and hospital RNs in the Whaley et al. study is the effect of recruitment strategy. Whaley et al. maintained that hospitals were likely to have recruitment success if they focused their attention on "young, single, baccalaureate prepared nurses who may be interested in continuing their education and seeking job promotion" (1989, p. 37). The implication of this is that, because of competition from hospitals, long-term care facilities may have greater difficulty in recruiting, well-educated, young, career oriented RNs.

In comparing the type of position held by long-term care facility RNs in the present study and hospitals RNs in the Whaley et al. study, 53.79% of the long-term care facility RNs held staff or general duty positions as compared to 71.90% of the hospital RNs. A head nurse or assistant head nurse position was held by 5.78% of the long-term care facility RNs and 7.87% of the hospital RNs. A position of supervisor was held by 12.56% of the long-term care facility RNs and 7.27% of the hospital RNs. The position of administrator or assistant administrator was held by 20.88% of the long-term care facility RNs as compared to 6.19% of the hospital RNs. The point to take notice of here is that although long-term care facility RNs as a group had a lower level of education than hospital RNs, they were more likely to hold administrative and supervisory positions.

Comparison within the present study found this same position-education pattern among long-term care facility and hospital employed RNs. This situation may be due to a combination of factors. Each long-term care facility generally has in its employment a limited number of RNs. These nurses would likely assume budgeted administrative and supervisory positions because, as one factor, physicians have a very limited presence in long-term care facilities. This consequently implies that it is the health care knowledge and experience of RNs that is predominant and

essential in this setting. Here, RNs play an especially important role as supervisors and administrators in assessing the health care needs of residents, drawing up strategies to adequately meet these needs, obtaining and regulating staff who are to administer care, and evaluating the effectiveness and quality of the care provided.

In long-term care facilities it is nurse's aides and licensed practical nurses, directed and controlled by RNs without excessive physician intervention, who actually carry out most the direct, hands-on care of residents. In hospitals, physicians generally appear daily to chart patient management through the medical orders they write and leave so that RNs can see to their implementation, even if licensed practical nurses and nurse's aides still assume much of the direct care. The point is that there is a big difference between the two settings with regard to the primary source of health care control (i.e., the physician vs. the nurse) and with regard to the degree of autonomy and authority that RNs have. And this is due largely to the fact that, given the extent of the absence of physicians in long-term care facilities, nurses assume essentially by default a position of greater authority, autonomy, and responsibility.

Another factor that might play a role in long-term care facility employment is the incentive of positions of greater authority and status. Although long-term care facility

employment might be considered occupationally marginal in comparison to hospital employment, this may be offset somewhat by the greater status of an administrative or supervisory position. Thus, in recruiting and retaining RNs, long-term care facilities may be finding that they can offer supervisory and administrative titles and roles to compensate nurses for the lower status, lower pay, and fewer benefits with accompany long-term care facility employment. Even though the educational level of long-term care facility RNs may be lower than that of hospital employed RNs in similar positions, these nurses may be what is available in the employee marketplace after accounting for recruitment competition from hospitals and other areas of nursing.

The small sample (N = 59) study of university medical center hospital RNs by Taunton et al. (1989) demonstrates the uniqueness of RN characteristics in different settings. For instance, the mean age of the RNs in this limited study was 29.81 years. This compares with data for the present study which reveals that the mean age of RNs in hospitals in general was 35.53 years and for long-term care facility RNs was 44.9 years. In the study by Whaley et. al (1989), the median age of hospital nurses was 36 years. Data for 1985 for long-term care facility RNs indicated a median age of 45 years (Strahan, 1988). The data from the different studies are compatible and show that hospital RNs are younger than long-term care facility RNs. Moreover, university medical

center RNs are younger than hospital RNs in general. This trend in the data seems to indicate that as the scope of the medical orientation of a health facility increases, the age of RNs employed there decreases.

As for the educational preparation of the RNs in the study by Taunton et al., 67% held a baccalaureate degree or higher. This percentage is much higher than that for RNs in both long-term care facilities and hospitals in general, and indicates the higher level of skill required in an advanced medical setting such as the university medical center.

Findings of the present study can also be compared with preliminary data from the 1985 National Nursing Home Survey reported on by Strahan (1988). Strahan's report focused on the characteristics of RNs working in nursing homes in 1985. Two specific findings of relevance were that nursing home RNs were older (median age of 45) than the average RN and that only about 20% of them had a baccalaureate degree or higher level of education (18% had a baccalaureate). The 1980 National Sample Survey of Registered Nurses II data analyzed for the present study indicated a median age of 33 (mean age of 35.53) for hospital RNs and 45 (mean age of 44.90) for long-term care facility RNs. Of the hospital RNs, 27% had an educational level of a baccalaureate degree or higher, whereas only 13% of the long-term care facility RNs had reached such a level of educational attainment.

The age of the long-term care facility nurses in the 1980 survey and the nurses in the 1985 survey was similar. However, the 1985 RNs had a somewhat higher level of education than the 1980 long-term care facility RNs, although the educational attainment of the 1985 nurses was still noticeably below that of the hospital RNs in the 1980 survey. This appears to indicate a trend toward higher education among long-term care facility RNs.

The number of long-term care facility RNs analyzed in the 1980 National Sample Survey of Registered Nurses II was 1,890, as contrasted to the 2,763 nursing home RNs analyzed by Strahan. Interpretation of and comparison with Strahan's findings are limited in the sense that Strahan did not report comparisons of nursing home RNs with hospital RNs. In this regard, the first and most notable thing that Strahan mentioned in summarizing the characteristics of RNs who worked in nursing homes in 1985 was that "registered nurses work more often in other types of facilities or settings than in nursing homes" (1988, p. 4).

This study has indicated that RNs who have marginal career characteristics have an increased likelihood of being employed in long-term care facilities. The practical implication of this finding is that quality of care for older people in long-term care facilities may be less than required to adequately meet existing needs. However, although the study may have drawn attention to such a

problem, focusing on solutions is an area calling for other studies implemented for this specific purpose.

A theoretical consequence of this study is the extension of marginality theory to the career or occupational situation of health care professionals, as well as to the employment setting itself. Germani (1980) delineated the expansion of the concept of marginality beyond the cultural and social relationship frames of reference, so that the economic and occupational spheres could also be encompassed, and Mizruchi (1983) related marginality to people's association with work organizations and the imbalance between employment vacancies and available labor personnel. The present study takes Mizruchi's conceptualizations a step further with its specific, empirical application within the health care field as career marginality characteristics of RNs and the marginal status of long-term care facility employment are investigated. In this sense the study is a microeconomic approach to marginality theory application, and is an initial application in this specific career area. Occupational marginality within the field of health care and registered nurse employment becomes relevant when considering the importance of quality of care for the continually growing number of older people in long-term care facilities. It is hoped that this study will contribute to the understanding of RN profiles, and to some of the characteristics of the

work setting, as they relate to long-term care facility versus hospital employment.

Limitations of the Study and Possibilities for Further Research

Limitations of the Study

One limitation of this study was the nature of the data set. That is, the data were existing data around which the study was formulated. Consequently, variable categories had to be accepted as they existed, even though a different categorization scheme may have been preferred. Also, with a preexisting data set not all variables which might be of interest are available. These are examples of the types of inherent shortcomings which may be present when working with preexisting data sets. Also, since the data are from 1980 they are not current data. However, the study nonetheless has value in terms of its theoretical relevance. Moreover, it can serve as a comparative base for evaluating the National Sample Survey of Registered Nurses 1988 (National Technical Information Service, 1989), which was recently released.

Another limitation of the study was the inability to compare RNs by sex. However, out of the more than 30,000 nurses in the 1980 National Sample Survey of Registered Nurses II, only 824 (2.74%) were males, thereby making comparison by sex problematic. The dilemma here was that

just 30 (1.60%) of the long-term care facility RNs were males; there were 553 (3.63%) male RNs who were employed in hospitals. In reporting on preliminary data from the 1985 National Nursing Home Survey, Strahan (1989) similarly found that only 2% of RNs employed in nursing homes were males. It has been noted that attracting men to the field has been particularly difficult, and that the low number of males in the nursing profession appears to be the result of nursing continuing to be perceived primarily as a woman's profession (Kirby, 1988; Lee, 1979; Robinson, 1979; Rogers, 1989).

For the same limited numbers reason as sex, racial/ethnic differences were not compared. Non-Caucasian RNs comprised 5.27% of the long-term care facility RNs and 7.85% of the hospital RNs. In Strahan's report on the 1985 National Nursing Home Survey, it was noted that minority groups made up a much smaller proportion of RNs working in nursing homes than their representation in the overall population; 89% of the RNs in nursing homes were white, non-Hispanic nurses. However, the 1985 11% RN minority figure in long-term care facilities reported by Strahan was twice the 1980 percentage for long-term care facility RNs in the present study. Strahan mentioned that studies (e.g., Jones et al., 1987) showed that this rate was about the same as that found in hospitals, and that studies (Feldbaum & Feldbaum, 1981; Smith et al., 1982) indicated that although minority individuals as a whole are more likely than white

non-Hispanic persons to serve the older age groups, this service is generally in a setting other than a hospital or nursing home.

A final limitation is that human motivational information regarding reasons for nurses being employed in one work setting as opposed to another was not included in the data. This type of information might have been useful in helping to clarify the more objective findings of the study. For example, job change was found to be more likely to occur among younger and more highly educated RNs. Is this indicative of less career stability, or does it represent a career advancement or improvement move? Long-term care facility RNs were found to be more likely to experience job change than hospital RNs. Is this a reaction to unfavorable work conditions in long-term care facilities, did these nurses find a better paying job elsewhere, or was some other factor influential? These are the types of questions that supplemental subjective information might have helped clarify.

Possibilities for Further Research

Utilizing 1980 data, the present study found level of education for long-term care facility RNs to be lower than that for hospital RNs. Preliminary data from the 1985 National Nursing Home Survey (Strahan, 1988) indicates that in 1985 a higher level of education existed for long-term care facility RNs than for nurses working in long-term care

facilities in 1980. The educational level of long-term care facility RNs in 1985, however, was still noticeably lower than that for hospital employed RNs in 1980. Longitudinal assessment of the educational patterns of long-term care facility and hospital RNs would be appropriate, so that educational trends among nurses might continue to be evaluated.

With regard to limited education as one marginal characteristic of nurses, the literature has suggested that higher levels of education result in a higher standard of care for elderly people in long-term care facilities (Abdellah, 1981; Brower, 1988; Kart, 1981; Martinson, 1984; Nkongho, 1988; Reif, 1982; Robb & Malinzak, 1981; Stanley & Burggraf, 1986; Williams et al., 1986). The present study did not investigate relationships between quality of care and the marginal characteristics of registered nurses and work setting. It is felt that this issue would be useful to examine in further studies. In such research, however, it would be appropriate to additionally consider other factors which might affect quality of care. Examples would be the adequacy of health care personnel staffing, and the existing level of pay for nurse's aides, who actually assume the bulk of direct, hands-on resident care.

In the present study the percentage of minority RNs in long-term care facilities was only one-half of the 1985 percentage reported by Strahan (1988), perhaps indicating a

trend toward increased employment of minority nurses in long-term care facilities. Along with the possible trend toward higher education among long-term care facility RNs, this might be an appropriate area to study longitudinally. With regard to gender differences in the field of nursing, a study of male nurses as a marginal segment of the RN population might be productive.

The final area for possible further research involves motivational factors. In terms of the four prediction equations examined in this study, it would have been useful to have additionally known RNs' reasons for being employed in a long-term care facility or hospital, their thoughts on the continuity of their work situation and their educational status, their reasons for job change, and reasons for unemployment. Further research might investigate such motivational factors, thereby providing explanatory information regarding RNs employment-related behavior.

Having noted limitations and possibilities for further research, the present study has shown that career marginality is more characteristic of the long-term care facility setting and the registered nurses who work there than the hospital setting and the nurses who work in that setting. Current demographics pertaining to the aging of the American population make this finding especially relevant. Nursing education, the health care field at large, governmental policy, and public opinion all have

significant roles to play in improving the long-term care situation of today's and tomorrow's elderly Americans. It is a challenging task, but one having the potential for effective and innovative solutions.

APPENDIX
NATIONAL SAMPLE SURVEY OF REGISTERED
NURSES QUESTIONNAIRE

Section A: Educational Background as a Registered Nurse

1. Please indicate (a) the basic nursing education which prepared you to become a registered nurse; (b) specify the month and year of graduation; and (c) specify the state (or country if not U.S.) in which you received your basic nursing education.

2. Since graduation from the basic nursing education program, have you received any additional degrees? (If yes, go to questions 3 and 4; if no, go to question 5.)

3. For all additional academic degrees you have received since graduation from your basic nursing program, please indicate (a) the type of degree; (b) whether or not the degree is related to your nursing career; (c) the month and year received; and (d) the state (or country if not U.S.) in which the degree was received. (If your highest academic degree is a master's or doctorate, continue with question 4; otherwise, go to question 5.)

4. What is the one primary focus of the highest degree you now hold?

5. Are you currently enrolled in a formal education program leading to an academic degree with a nursing or nursing-related major. (If yes, answer questions 6, 7, and 8; if no, go to question 9.)

6. Are you considered a full-time or part-time student?

7. Specify the type of degree for which you are now studying?

8. How is your education being financed?

9. Did you graduate from a formal nurse practitioner program? (If yes, answer questions 9a, 9b, and 9c; if no, go to question 10.)

9a. How many months did you attend this program?

9b. When you completed this program, which of the following did you receive?
Certificate
Master's
Other (specify)

9c. For what practitioner specialty did you study?

10. Have you participated during the past year in any type of continuing education programs? (If yes, answer questions 10a, 10b, and 10c; if no, go to question 11.)

10a. In what type(s) of programs did you participate in the past year either inside or outside of your employment setting?

10b. What was the total number of hours of instruction offered in the programs you participated in during the past year?

10c. How did you finance your continuing education?

If you answered questions 10a, 10b, and 10c, go to Section B, question 12.

11. If you have not participated in any continuing education programs in the past year, what are your reasons for not participating?

Section B: Employment Status

12. What is the total number of years that you have worked for pay as a registered nurse since you graduated from your basic nursing education program? (If less than a year go to 13a; if you have never worked as a nurse go to Section C, question 26.)

13a. Were you employed in nursing as of November 15, 1980? (If yes, go to 13b; if no, go to 14.)

13b. Indicate the city, county, and state of employment on November 15, 1980.

14a. Were you employed in nursing one year ago on November 15, 1979? (If yes, go to 14b; if no, go to 15.)

14b. Was the location of your November 15, 1979 employment the same as for November 15, 1989? (If yes, go to 15; if no, go to 14c.)

14c. Indicate the city, county, and state of employment on November 15, 1979.

15. Using the following list, indicate the one alternative that best describes the type of setting in which you are currently working in your principal nursing position: Hospital; extended care (nursing home or extended care facility); nursing education; public health/community health; student health service; occupational health; physician's or dentist's office; self-employed; other (specify).

16. Please indicate the type of agency by which you are currently employed in your principal nursing position.

17. What is your current position title for your principal nursing position?

18. For your current principal nursing position, please indicate the approximate percentage of your time spent in the following areas during a usual work week:
A. Administration
B. Consultation with agencies and/or professionals
C. Direct patient care, not including staff supervision
D. Research
E. Supervision
F. Teaching nursing or other students in health care occupations
G. Other (specify)

19. Do you:
Work an entire calendar year or school or academic year on a full-time basis?
Work an entire calendar year or school or academic year on a part-time basis?
Work only part of the normal work year on either a full- or part-time basis?

20. Approximately how many hours are usually scheduled to work during a normal work week?

21. Approximately how many weeks are there in your normal work year for your principal nursing position?

22. Please specify the annual earnings for your current principal position only.

23. Do you hold more than one position in nursing for pay? (If yes, answer 23a and 23b; if no, go to question 24.)

23a. Please indicate the type of work you do in your other nursing position(s) for pay.

23b. Please provide an estimate of the total annual earnings for the year from your other nursing position(s).

24. Do you carry any malpractice insurance exclusive of that your employer carries?

Section C: Employment Status of RNs Not Currently Employed in Nursing

25. How long has it been since you last worked as a registered nurse for pay?

26a. Are you currently employed in an occupation other than nursing? (If yes, answer 26b and 26c; if no, go to question 27.)

26b. Are you considered a full-time or part-time employee?

26c. Are you employed in a health-related agency or position?

27. Are you actively seeking employment as a registered nurse? (If yes, answer 28 and 29; if no, go to question 30, Section D.)

28. Indicate the number of weeks during which you have been actively seeking a nursing position.

29. Are you looking for a full-time or part-time nursing position?

Section D: General Information

30. Sex:
    Female
    Male

31. What is your year of birth?

32. What is your racial/ethnic background?

33a. What is your current marital status?

33b. Children living at home most of the time are:
No children at home
All less than 6 years old
All 6 years old or older
Some less than 6 and some over 6

34. In what city, county, and state were you living on November 15, 1980?

35a. Was the location of your residence on November 15, 1979 the same as on November 15, 1989? (If yes, go to 36; if no, go to 35b.)

35b. Indicate the city, county, and state where you were living on November 15, 1979.

36. Indicate when you were issued your first U.S. license to practice as a registered nurse and specify the state which issued this license to you.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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